CONSERVATION MANAGEMENT PLAN

for the property of

THE FUND FOR NORTH BENNINGTON, INC.

"Mile-Around Woods" Property

Photo 1: Beautiful skies over the Vermont Valley

Bennington, Vermont

2022 –2032 Planning Period

Long View Forest MANAGEMENT

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State of Vermont
Andrew Sheere, CF
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USE VALUE APPRAISAL FOREST MANAGEMENT PLAN
SIGNATURE PAGE

I (we) certify that my (our) forest land, exclusive of any house site or other developed portion, is at least 25 acres in size and is under active long-term forest management for the purpose of growing and harvesting repeated forest crops in accordance with minimum acceptable standards for forest management. These management standards include the practices outlined in the booklet *"Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont,"* which have been developed to help minimize stream siltation and soil erosion.

This signature page shall constitute an addendum to my forest management plan. By signing below, I understand I am signing my Use Value Appraisal Program, forest management plan and by doing so I agree to manage according to the current approved plan.

Robert Woolmington- President
The Fund for North Bennington, Inc.

3/14/2022
Date

NRCS Approval

Date

February 14, 2022

Andrew Sheere, CF
VT Licensed Forester #148.0121870
TSP 12-8326

Date

Approving County Forester

Date

TABLE OF CONTENTS

I. SIGNATURE PAGE 3

II. EXECUTIVE SUMMARY 6

III. PROPERTY OVERVIEW 10

A. Property Summary 10

B. UVA Forest Management Map 19

IV. FOREST UNIT DESCRIPTIONS & PRESCRIBED TREATMENTS 20

A. Unit 1- (Not part of UVA land) 20

B. Unit 2 25

C. Unit 3 29

D. Unit 4 33

E. Unit 5 38

F. Unit 6 42

G. Unit 7 46

H. Unit 14 50

I. Unit 8 56

J. Unit 9 58

K. Unit 11 61

L. Other Management Units 63

V. SUMMARY OF MANAGEMENT ACTIVITIES 64

VI. RESOURCE INVENTORY MAPS 66

A. Map of Soil & Water Resources 66

B. Map of Habitat Values 67

C. Map of Inventory Plots 68

D. NRCS Practices Map 69

VII. APPENDIX 70

A. Invasives Assessment for NRCS Funding Considerations 70

B. Reader's Guide to Forest Management Planning 73

C. Resources for the Landowner 75

D. Forest Management Reference Publications 77

E. Glossary 78

VIII. USE VALUE APPRAISAL PARCEL DATA ENTRY FORM 80

II. EXECUTIVE SUMMARY

The Fund for North Bennington's "Mile-Around Woods" parcel has a rich history and paired with Paran Woods constitutes the core of the Fund's lands. Like Paran Woods, the Mile-Around Woods is ecologically diverse and contains forests, wetlands, and meadows. The health of the Fund for North Bennington's lands is threatened by multiple stressors:

- An onslaught of invasives that is overwhelming native trees, plants and destroying beneficial wildlife habit
- Severe deer pressure blocking forest regeneration (both through browsing and invasives seed dispersal)
- Climate change (alterations in extent and timing of rainfall, heat, cold, storms et alia)

Photo 2: An impressive bittersweet vine (an invasive exotic plant) strangling a native white pine tree provides a potent example of the threat that invasive plants pose to this ecosystem.

Management believes that just letting Nature take its course can no longer be an adequate strategy to maintain a biologically diverse and healthy local ecosystem in the face of these stressors. Management's primary goal is to increase ecosystem resiliency. While this plan focuses on control of invasive plants, adaptation on complementary fronts will also be needed to help assure long-term ecosystem health. These adaptations include improving food and cover for birds and mammals via better hedgerow and field border management. This plan also builds on recent accomplishments in improving meadow, early

successional and shrubland habitat in support of endangered birds and invertebrates (including pollinators) habitat.

Recommendations for this planning period therefore focus on controlling the invasive plants throughout the property. The availability of NRCS funds influences the feasibility of the recommendations; many will not be able to be implemented without the aid of cost-share funds due to their high cost. In addition to invasive plant control, other management recommendations focus on:

1. Upland and forest stand habitat management
2. Meadow and field border management
3. Trail Maintenance,
4. Possibly constructing a deer exclosure in Unit 4 to educate the general public on the negative impacts to the ecosystem by over-browsing by deer, and
5. Possibly establishing continuous forest inventory plots (CFI) for ongoing monitoring of local conditions and education.

BACKGROUND

(The following text is quoted from the 2012 Conservation Management Plan)

On November 19, 1779, Thomas Hall acquired 100 acres in North Bennington, including The Mile-Around Woods. The Mile-Around Woods got its name from Trenor Park-Thomas Hall's great-grandson-in-law, a gifted and ambitious lawyer, and a compulsive worker. When Park came home in 1865 from a hectic thirteen years in San Francisco, he suffered a breakdown from overwork. He decided on his own course of therapy: Without cutting a single tree, he would design a road through the hilltop woodlot that was exactly one mile around. He succeeded.

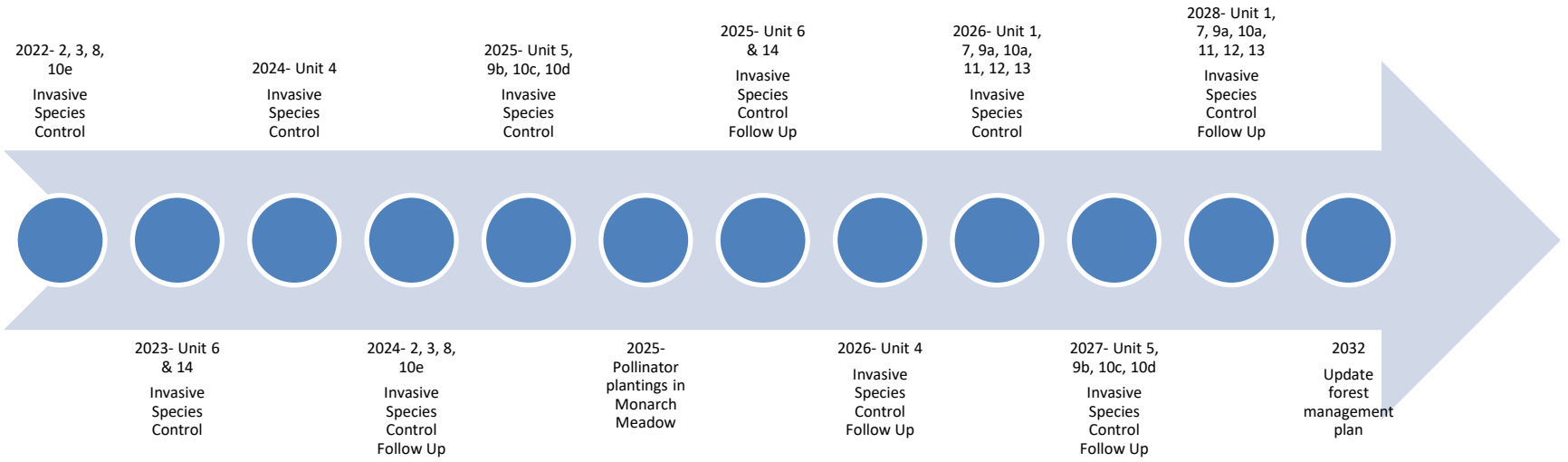
The Mile-Around Woods (the "Woods") is now the core of the woodland holdings of The Fund for North Bennington, Inc. (the Fund"), a tax-exempt, non-profit conservation organization. Prior to Fund's acquisition of the Woods in 1994, they were part of the historic Hall Farm property that once included all of the land bounded on the east by Park Street, on the south and west by Harrington Road, and on the north by West Street in North Bennington and what is now called McCullough Road in Bennington. The Hall farmhouse was a modest structure on Park Street, while Trenor Park and his descendants for a century lived in the grand Second Empire manse known now as the Park-McCullough House.

The Park-McCullough House is on the National Register of Historic Places and is managed by a non-profit organization to preserve its historic character.

The woodlands associated with the Hall Farm and the Park-McCullough House were historically managed for low intensity forestry and firewood cutting. Hall Park McCullough, the owner of the property for much of the 20th century, took great pride in the woodlands. He arranged for planting a small stand of white pines at the southwest corner of the Woods, but largely refrained from cutting The Mile-Around Woods. He and many of his fellow citizens enjoyed the spectacular show of spring flowers in the Woods.

In 1978, a limited cut of merchantable timber was executed in the Mile-Around Woods at the direction of Mr. McCullough's descendants. Ed Flaccus, an ecologist at Bennington College, became very concerned by this harvest. He knew the woodlands well from years of study with his science classes and feared that additional cutting in The Mile-Around and other woods on the property would destroy the special qualities of these forests. He therefore summarized the ecological significance of the woodlands in a study for the McCullough family and pleaded for their preservation. As a result of Dr. Flaccus' analysis and prescription for conservation, Babs and Bill Scott soon afterward donated 16 acres, including the stand of majestic old oaks, to the Vermont chapter of The Nature Conservancy to be preserved un-cut and undeveloped.

MANAGEMENT TIMELINE



III. PROPERTY OVERVIEW

A. Property Summary

Grand List Landowner Name	The Fund for North Bennington, Inc.
Mailing Address	C/O Robert Woolmington, President P.O. Box 803 North Bennington, VT 05257
Street Address	North of Overlea Road
Coordinates	Mile-Around Woods Trail Head 42.929265, -73.251132
Primary Contact:	Robert Woolmington, President
Phone	802-282-3401
Email	thefund@northbennington.org
Town Where Land Is Located	Bennington
County Where Land Is Located	Bennington
Grand List Acreage	236.56
SPAN	051-015-63864
Orthophoto(s)	088048 & 088044
Document Objective and General Property Description	This 10-year Conservation Management Plan ("CMP") is valid from 2022-2032. The information presented in this management plan will supersede the management plan adopted by The Fund for North Bennington, Inc. in 2012. This plan is a guide to the current condition of the forest, and to scheduled forest management activities for the upcoming planning period. This plan also conforms to the standards adopted by the Current Use Advisory Board for eligibility under Vermont's Use Value Appraisal ("UVA") program.
Adaptive Management	*"Is a dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met."* *(Excerpted from the Society of American Foresters "Dictionary of Forestry")*

	Using this adaptive approach, it is important to remember that this Plan is a document used to guide, not dictate, forest management. Changeable conditions like insect or disease outbreak, changes in landowner goals, or changing market conditions are examples of events that may necessitate amending the plan. Requests to amend the plan are subject to approval from the County Forester. Additionally, the plan does not preclude the need for scoping areas in advance of management operations or the need for annual monitoring of the forest.
Purpose of the Use Value Appraisal Program (A.K.A. Current Use)	The purpose of Vermont's Use Value Appraisal law is to: • encourage and assist in the maintenance of Vermont's productive agricultural and forest land, • encourage and assist in the conservation and preservation of these lands for future productive use and for the protection of natural ecological systems, • prevent the accelerated conversion of these lands to more intensive use by the pressure of property taxation at values incompatible with the productive capacity of the land, • achieve more equitable taxation of undeveloped lands, • encourage and assist in the preservation and enhancement of Vermont's scenic natural resources, and • enable the citizens of Vermont to plan its orderly growth in the face of increasing development pressures in the interest of the public health, safety, and welfare. Forest Land must be managed for the harvesting of repeated forest crops in accordance with accepted forest management practices. *(Excerpted from the Use Value Appraisal Program Manual dated March 31, 2010)*
Long View's Role in Ongoing Stewardship	As your forester and agent, we strive to represent your best interests. Please call us for a consultation when: • When there is a change of ownership • When you sell or purchase land • When forest management activities are called for in this management plan

	• If you complete a forest management practice that we were not directly involved with • Anytime you have a question about your forest or what lives in it; we love to hear from you!
Record Keeping	Records of forest management activities should be maintained for a period of at least 5 years. And include such items as • Forestry invoices • Contracts and work orders • Timber harvest paperwork & mill slips. • A journal of forest practices completed (harvests, timber stand improvement, invasives management, etc.)

Landscape Setting/Biophysical Region	This property is located in Bennington County, Vermont, in the northeastern United States, and falls within the Vermont Valley biophysical region. Like the greater region, the Mile-Around lands are a mix of forests, fields, wetlands, and other waterbodies. The area has a high number of agricultural fields but also larger blocks of forestland. North Bennington (pop ~1700) and South Shaftsbury (pop. ~400) are the closest towns.
Land Use History	There is no known site-specific evidence of the extent of use of the property by indigenous people prior to European settlement. European settlers introduced a dramatic change in the land's use and the human patterns of cultivation, habitation, and resource extraction. Forest management today continues to work with the effects of these changes on the forest's composition. The many old stone walls present on the landscape nod to the property's intense present and historic agricultural use. This property is unique in that there is a long history of ownership (since the late 1700's) documenting management with a strong conservation ethic. Very little cutting has occurred over this time and much of the forest is now mature and beginning to take on old growth characteristics.

	As European settlers and their economies changed, fields under cultivation or in pasture were abandoned and grew back to forest. Some meadows are periodically mown to keep them in an open condition for wildlife habitat like Monarch Meadow that is being managed for pollinator and shrubland bird habitat. Most fields are actively managed for agriculture with a rotation of crops like corn and hay. The Fund for North Bennington is considering moving away from growing corn and switching to a more sustainable crop. Extensive populations of honeysuckle and other invasive-exotic plants threaten biological diversity on the landscape.
Forests of Recognized Importance (FORI)	This forest: ☐ - IS; ☒ - IS NOT a FORI Forests of Recognized Importance (FORI) (A.K.A. high value conservation forest, HVCF) represent globally, regionally, and nationally significant large landscape areas of exceptional ecological, social, cultural, or biological values. These forests are evaluated at the landscape level, rather than the stand level and are recognized for a combination of unique values, rather than a single attribute. FORIs may include but are not limited to landscapes with exceptionally high concentrations of one or more of the following: (Definition from American Tree Farm System: https://www.treefarmsystem.org/fori)

Management Goals *(not necessarily listed in order of importance)*	The Property will be managed to conserve natural habitat, restore old-growth forest, provide trails for public use, allow non-motorized public recreation, maintain scenic and historic qualities and for a laboratory for scientific study and education.
	• Invasive, non-native species such as honeysuckle, bittersweet, multiflora rose, buckthorn, barberry, and euonymus may be removed.
	• There shall be no commercial harvesting of trees.
	• Except as otherwise specified in this plan, trees shall be cut only for the following purposes:
	  • Construction and maintenance of foot trails,
	  • Protection of the public safety,

	• Removal of diseased specimens and promotion of increased diversity and forest resilience, • To foster regeneration of native species in connection with removal of invasive shrubs, to release mast trees or in small, experimental patches, • To maintain the historic boundaries of the Property's meadows, • To conserve the existing wetlands, or • Historic stonewalls shall be preserved. • Downed timber shall not be physically removed from the Property. • To protect aesthetic and environmental values. • To protect cultural and historical sites. • To provide diverse habitat for wildlife, to include endangered shrubland and grassland birds. • To provide recreational opportunities for the community.
Statement on Invasive Plants and Their Proposed Control.	With high to extreme levels of invasive plant infestation found throughout the property, *the use of mechanical mulching and selective application of herbicides will be foundational to begin gaining control of invasive plant populations and providing opportunity for native plants to reclaim the landscape*. It is well-understood that the use of herbicides is controversial, and their recommended use is not taken without due consideration of other methods of control, but mechanical control alone (mulching, hand pulling) has not proven to be an effective way of gaining control of a problem this great. Invasive species decimate wildlife habitat, with cascading effects on biodiversity. Natural communities present on the property risk collapse if invasive plants are not controlled as native species continue to diminish and are supplanted by monocrop thickets of invasives. Having said this though, options for mechanical mulching of the most extreme areas of infestation is an available option that can help reduce the amount of herbicide used. In this case, the first entry consists of the

	mulching with a chemical follow up two years later rather than two chemical entries. Mulching is generally a more expensive alternative than chemical control and mulching equipment is limited by the severity of terrain (gentle to moderate slopes), so it is only being recommended on gentle to moderate slopes where the greatest infestations are present. With appropriate permits, carefully controlled use of fire could be considered. Assisting with removal and disposal of invasives on adjacent properties is encouraged to mitigate the reestablishment of invasives on the Fund's property. In sum, a full range of treatment options is encouraged. Chemical treatment by herbicides is recommended when other treatments are not practical or have been proven not to be effective. If other practical and proven effective treatment options are identified, developed or refined during the term of this plan, they may be substituted for, or reduce the scope of, chemical treatments.
Access	Motorized and wheeled vehicles are not permitted on the property except for maintenance and handicapped access. Foot traffic and dog-walking are permitted. The Mile-Around the Woods Trail, Short Aldrich Trail, and others provide ample recreational opportunity and a good network of forest and field roads exist to facilitate maintenance and management.
Property Boundaries	Like road access, boundary line maintenance is an essential part of excellent forest management and land stewardship. Many property boundaries are evidenced with old stone walls. It is recommended that property boundaries be identified with signage letting users know where the Fund for North Bennington's land begins and ends.
Cultural & Historic Features and Other Special Sites	Old stone walls and barbed wire fences record a rich agricultural history. A very small stone quarry was found in Unit 6 in the southern part of the property (see photo).

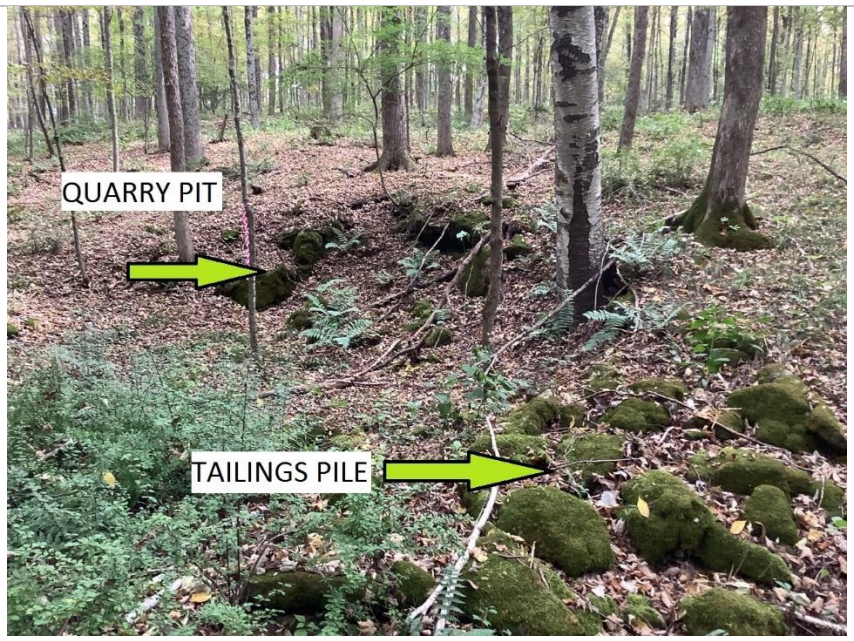


Photo 3: The site of an old stone quarry was found in Unit 6.

Fish & Wildlife Habitat and Rare, Threatened, or Endangered Species

This area has been identified by the State of Vermont as habitat important for:

- Black bear-..... YES-☐; NO-☒
- Winter range for whitetail deer- ..... YES-☐; NO-☒
- Occurrences of rare, threatened, ... YES-☒; NO-☐
  or endangered species

Element Occurrence Report (EOR) references a rare animal in the area. The report is not approved for public circulation and so is not included in the management plan. A copy of the report is on file at Long View Forest. Standard Acceptable Management Practices here will protect the species' habitat and temporal use of special areas.]

(Source: Vermont Center for Geographic Information (VCGI)- http://geodata.vermont.gov/)

Recreation/Aesthetics

Stewardship for ecological resilience and recreation define the use of this property. Two scenic trails, the Mile-Around the Woods Trail and the Short Aldrich Trial are open to, and frequented by, the public; other trails exist as well.

Recommendations are being made to:

1. Repaint existing or install new trail markers, and add property boundary markers
2. Repair/replace signage as needed

Photo 4: An informative sign at the Mile-Around Woods Trailhead educates passersby on the flora and fauna in the area.

Water Quality, Wetlands & Riparian Corridors and Measures to Enhance and/or Protect Functions & Values	Acceptable Management Practices (AMP's) (A.K.A Best Management Practices or BMP's) are essential to ensuring that the benefits for air, soil and water quality are maintained or enhanced for all. Special management zones, including river and stream corridors, steep slopes, fragile soils, wetlands, vernal pools, seeps, and lake and pond shorelines shall follow guidelines set forth in *"Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont" (Adopted October 16, 2016).* A Red maple Black ash swamp occupies the central-northern part of the property. Swamp white oak was noted in the area; other small wetlands exist as well (see Unit 9 on conservation management map)
Management Plan Implementation Constraints	As noted, the existence of the Fund for North Bennington's forest stands are threatened by multiple stressors. Management recognizes the need to begin a thorough program of invasives removal and control. The costs of the program are expected to be considerable and meeting the long-term commitment to continual monitoring will not be easy. Regardless, the Fund will focus its proven capacity for setting and meeting challenging conservation goals for the greater benefit of its community and the land that is valued in so many ways. The principal constraint on implementation of this plan will be financial resources. If

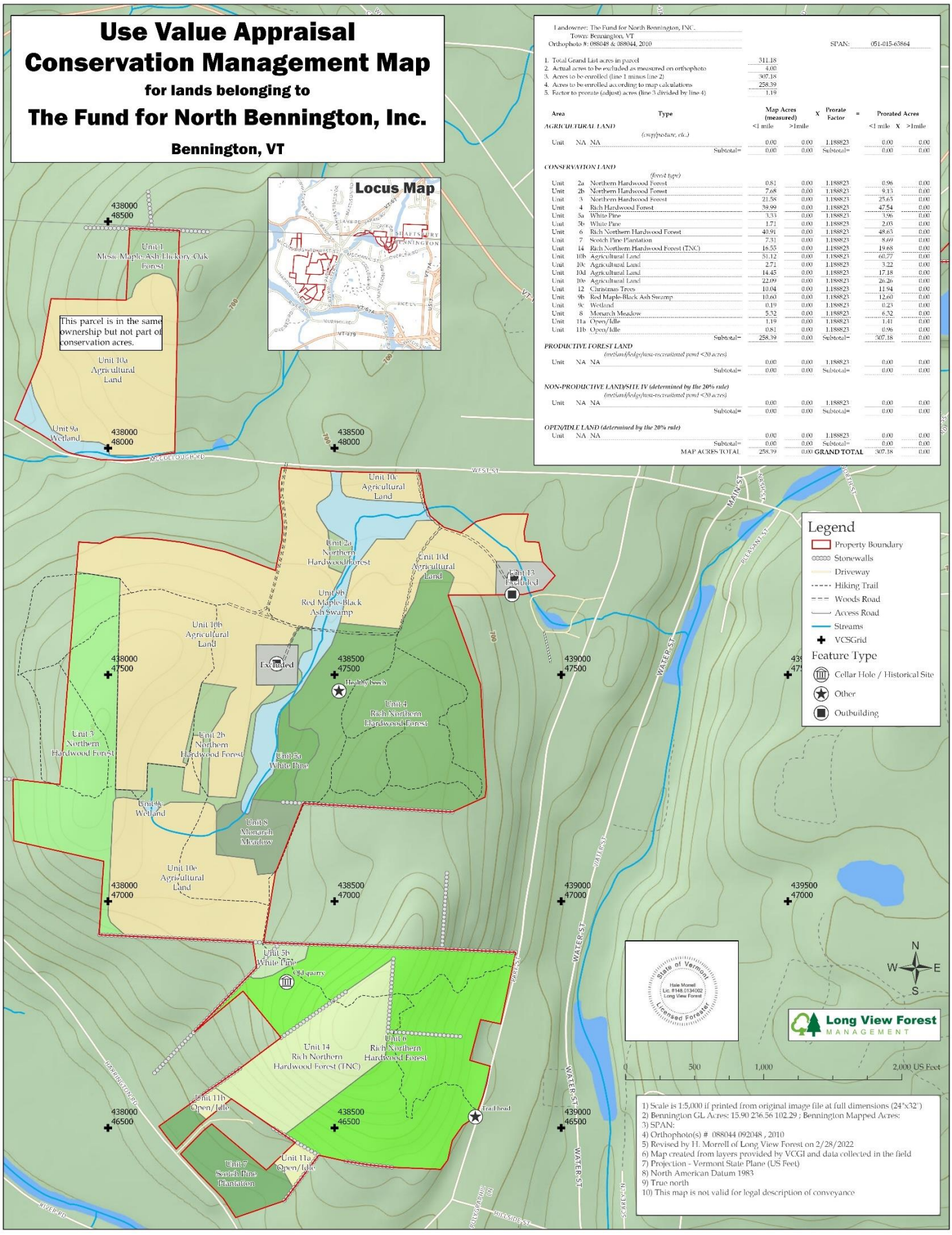
	adequate funding from NRCS or other sources is not available, the scope of implementation will be curtailed and/or there may be substantial delays in the prescribed schedule. Engaging community volunteers and encouraging regular community “work days” would be beneficial.

Use Value Appraisal
Conservation Management Map
for lands belonging to
The Fund for North Bennington, Inc.
Bennington, VT

Landowner: The Fund for North Bennington, INC.
Town: Bennington, VT
Orthophoto #: 088048 & 088044, 2010
SPAN: 051-015-65864

1. Total Grand List acres in parcel		311.18
2. Actual acres to be excluded as measured on orthophoto		4.00
3. Acres to be enrolled (line 1 minus line 2)		307.18
4. Acres to be enrolled according to map calculations		258.39
5. Factor to prorate (adjust) acres (line 3 divided by line 4)		1.19

Area		Type	Map Acres (measured) <1 mile	Map Acres (measured) >1mile	X Prorate Factor	= Prorated Acres <1 mile	Prorated Acres X >1mile
AGRICULTURAL LAND		*(crop/pasture, etc.)*					
Unit	NA	NA	0.00	0.00	1.188823	0.00	0.00
		Subtotal=	0.00	0.00	Subtotal=	0.00	0.00
CONSERVATION LAND		*(forest type)*					
Unit	2a	Northern Hardwood Forest	0.81	0.00	1.188823	0.96	0.00
Unit	2b	Northern Hardwood Forest	7.68	0.00	1.188823	9.13	0.00
Unit	3	Northern Hardwood Forest	21.58	0.00	1.188823	25.65	0.00
Unit	4	Rich Hardwood Forest	39.99	0.00	1.188823	47.54	0.00
Unit	5a	White Pine	3.33	0.00	1.188823	3.96	0.00
Unit	5b	White Pine	1.71	0.00	1.188823	2.03	0.00
Unit	6	Rich Northern Hardwood Forest	40.91	0.00	1.188823	48.63	0.00
Unit	7	Scotch Pine Plantation	7.31	0.00	1.188823	8.69	0.00
Unit	14	Rich Northern Hardwood Forest (TNC)	16.55	0.00	1.188823	19.68	0.00
Unit	10b	Agricultural Land	51.12	0.00	1.188823	60.77	0.00
Unit	10c	Agricultural Land	2.71	0.00	1.188823	3.22	0.00
Unit	10d	Agricultural Land	14.45	0.00	1.188823	17.18	0.00
Unit	10e	Agricultural Land	22.09	0.00	1.188823	26.26	0.00
Unit	12	Christmas Trees	10.04	0.00	1.188823	11.94	0.00
Unit	9b	Red Maple-Black Ash Swamp	10.60	0.00	1.188823	12.60	0.00
Unit	9c	Wetland	0.19	0.00	1.188823	0.23	0.00
Unit	8	Monarch Meadow	5.32	0.00	1.188823	6.32	0.00
Unit	11a	Open/Idle	1.19	0.00	1.188823	1.41	0.00
Unit	11b	Open/Idle	0.81	0.00	1.188823	0.96	0.00
		Subtotal=	258.39	0.00	Subtotal=	307.18	0.00
PRODUCTIVE FOREST LAND		*(wetland/hedge/non-recreational pond <20 acres)*					
Unit	NA	NA	0.00	0.00	1.188823	0.00	0.00
		Subtotal=	0.00	0.00	Subtotal=	0.00	0.00
NON-PRODUCTIVE LAND/SITE IV (determined by the 20% rule)		*(wetland/hedge/non-recreational pond <20 acres)*					
Unit	NA	NA	0.00	0.00	1.188823	0.00	0.00
		Subtotal=	0.00	0.00	Subtotal=	0.00	0.00
OPEN/IDLE LAND (determined by the 20% rule)							
Unit	NA	NA	0.00	0.00	1.188823	0.00	0.00
		Subtotal=	0.00	0.00	Subtotal=	0.00	0.00
		MAP ACRES TOTAL	258.39	0.00	GRAND TOTAL	307.18	0.00



1) Scale is 1:5,000 if printed from original image file at full dimensions (24"x32")
2) Bennington GL Acres: 15.90 236.56 102.29 ; Bennington Mapped Acres:
3) SPAN:
4) Orthophoto(s) # 088044 092048 , 2010
5) Revised by H. Morrell of Long View Forest on 2/28/2022
6) Map created from layers provided by VCGI and data collected in the field
7) Projection - Vermont State Plane (US Feet)
8) North American Datum 1983
9) True north
10) This map is not valid for legal description of conveyance

IV. FOREST UNIT DESCRIPTIONS & PRESCRIBED TREATMENTS

A. Unit 1- (Not part of UVA land)

Forest Type:	**Mesic Maple-Ash-Hickory-Oak Forest**
Pro-Rated Acres:	**3.08**
Location:	**Small stand of trees at north end of fields north of McCullough Road**

NARRATIVE

This area is a small woodland at the northern end of the McCullough Road field (Unit 10a). It is not contiguous with the greater property and has no organized trails through it. Management recommendations will focus on controlling invasive plant populations and NRCS funds will be applied for to help pay for the cost of these efforts.

Natural Community Information*

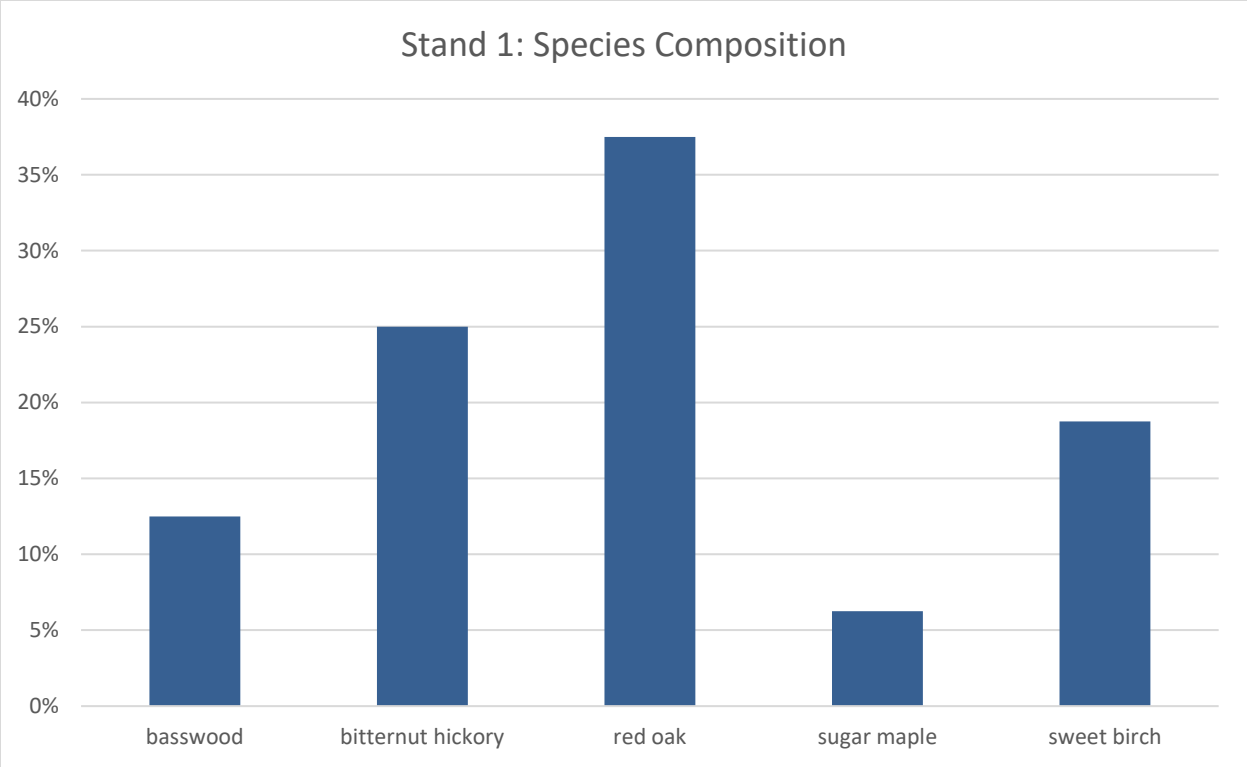
Type: **Mesic Maple-Ash-Hickory-Oak Forest**
Variant: -
Patch Size: **L**= Large Patch- occurs in the landscape on a scale of 50 to 1,000 acres.
State Rank: S3= High quality examples are uncommon but not rare

ECOLOGY AND PHYSICAL SETTING

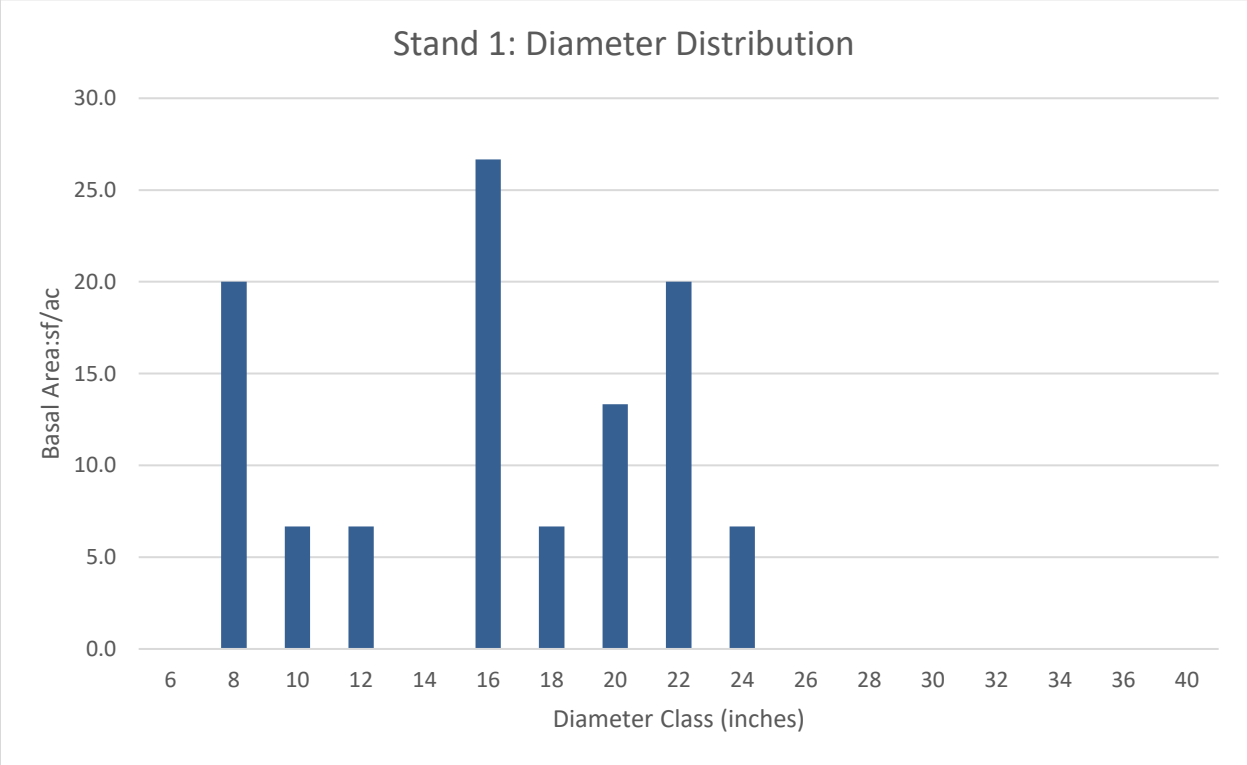
These forests share much in common with Northern Hardwood Forests, but they have some striking affinities with the Central Hardwood Forests of the Appalachians to our south. Sugar maple, white ash, and red maple are common trees, but more southern species, such as oaks and hickories, are present as well. Found in the warmer climate areas of Vermont, these forests see higher-than-average temperatures and lower-than-average rainfall. Mesic Maple-Ash-Hickory Forests have soils that are typically somewhat drier than those in the average Northern Hardwood Forest. These soils are probably well drained to somewhat excessively drained. Topography is gentle to rolling. Parent materials are glacial tills. Bedrock can be close to the surface locally, but shallow bedrock usually creates such extreme conditions that other, drought-tolerant communities develop.

This is a poorly understood community in Vermont. More data on vegetation, soils, and land use history will help us to better understand the relationship between these forests and others in the state and region.

** Thompson, E.H. & Sorenson, E.R. 2000. Wetland, Woodland, Wildland- A Guide to the Natural Communities of Vermont. The Nature Conservancy and the Vermont Department of Fish & Wildlife. University Press of New England, Hanover, NH.*



- Bitternut hickory and red oak prefer the warmer temperatures that the Vermont Valley offers.



- The prevalence of 16-24” trees suggest a very even-aged condition.

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• No recent management
Site Class *(1-4 with 1 being best and 4 being poorest)*	2	***Soil Map Unit(s)***	41 D: Galway-Farmington Complex 42 C: Macomber Taconic Complex
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Honeysuckle, winged euonymus	
Observed level of Impact		☐ Low ☒ Medium ☐ High	
Stand Quality & Health ***(Subjective)***		☐ Poor ☒ Average ☐ Excellent	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	Beech
Number of Sample Points		3	
Basal Area Factor		20	
Quadratic Mean Dia. *(inches)*		13	
Total Basal Area *(ft^2/acre)*		107	
Basal Area Range		60-140	***Species to Favor***
Trees per Acre		117	Basswood, oak, hickory, sugar maple, black birch
Elevation (feet)		680-720 Δ- 40’	
Aspect		Northwest	

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• Sedge	• Christmas fern	

PLANNED TREATMENTS	
Year	2026
Treatment	INVASIVE SPECIES CONTROL -CHEMICAL • 3.8 acres moderate infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 4- see Appendix A)

PLANNED TREATMENTS	
Year	2028
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to NRCS for 2026 treatment • 3.8 acres light to moderate infestation

B. Unit 2

Forest Type:	**Northern Hardwood Forest**
Pro-Rated Acres:	**8.29**
Location:	**Small areas of forestland (large hedgerows) in center of property**

NARRATIVE

Unit 2 is made up of small patches of forest bordering the fields in the central part of the property. They also serve as a buffer to the wetland nearby (Units 9b & 9c). Controlling invasive plants is the primary management goal for the coming planning period.

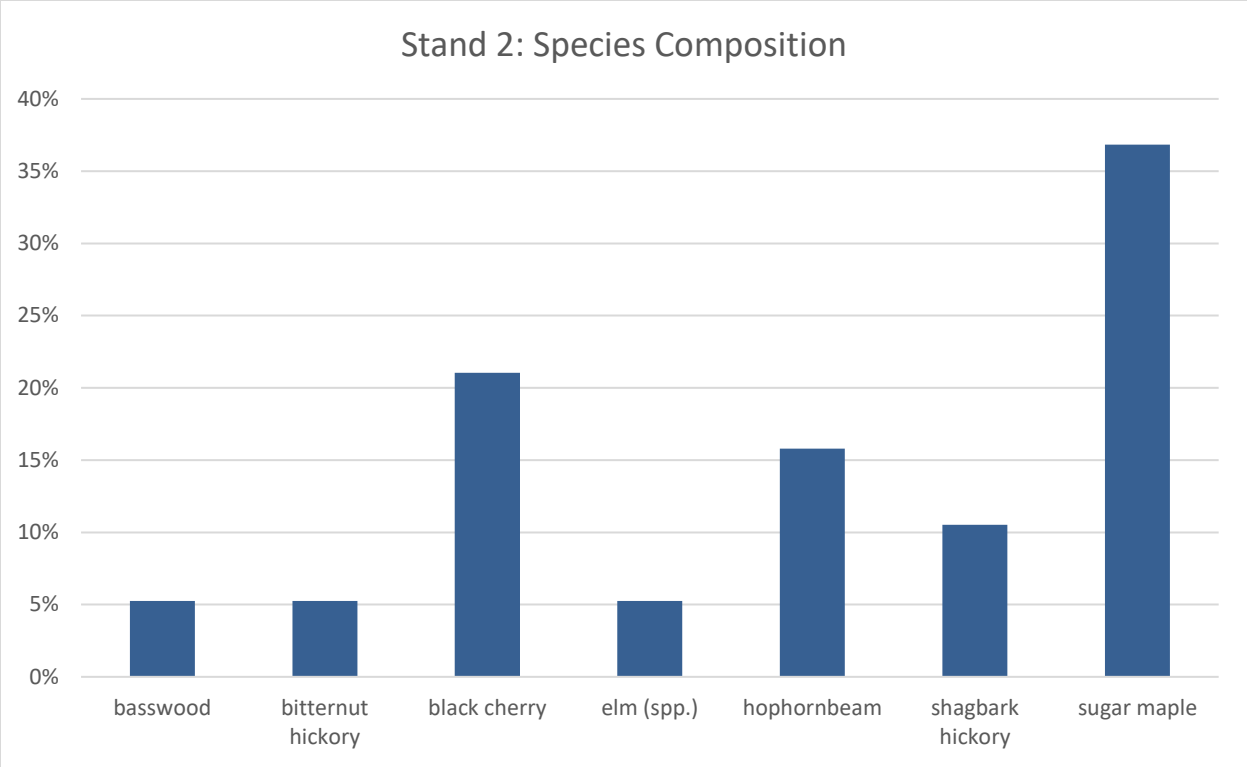
Photo 5: Unit 2 consists of non-managed hedgerows that are choked with invasive plants.

Natural Community Information*

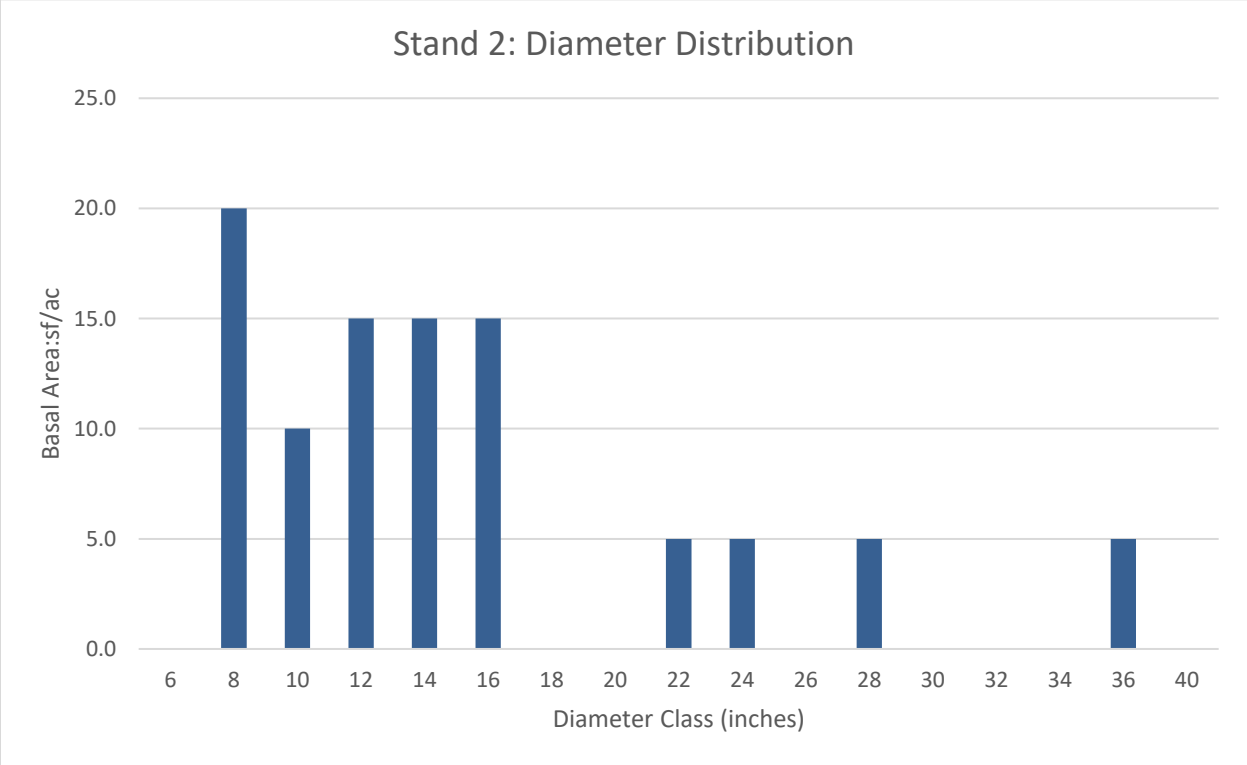
Type: Northern Hardwood Forest
Variant: -
Patch Size: Matrix- dominant in VT's landscape, occupying 1,000 to 100,000 contiguous acres
State Rank: S5= Common & Widespread in the state

Northern Hardwood Forest
This is Vermont's most abundant forest, the forest that truly characterizes the Northern Hardwood Forest Formation. It blankets hills in every biophysical region of the state and creates a background setting, a so-called matrix, for the smaller communities – the swamps, fens, outcrops, and meadows. It is a broadly defined community type, encompassing a great deal of variation. But there are some things that all expressions of this community share in common. Beech and yellow birch are almost always present. Sugar maple is usually present, but in some cases red maple is more prominent. Most soils are formed in ablation or basal till and are loamy, cool, and moist. These forests are found at elevations below 2,700 feet on gentle to steep slopes.

** Thompson, E.H., Sorenson, E.R. & Zaino, R.J. 2019. Wetland, Woodland, Wildland- A Guide to the Natural Communities of Vermont. The Nature Conservancy, The Vermont Land Trust, and the Vermont Department of Fish & Wildlife. Chelsea Green Publishing, White River Junction, VT.*



- Despite its small area, there is good overstory diversity



The largest diameter trees are likely agricultural remnants (pasture trees).

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• Unmanaged hedgerows
Site Class *(1-4 with 1 being best and 4 being poorest)*	2	***Soil Map Unit(s)***	42 C: Macomber-Taconic Complex
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Honeysuckle and common buckthorn	
Observed level of Impact		☐ Low ☐ Medium ☒ High	
Stand Quality & Health ***(Subjective)***		☒ Poor ☐ Average ☐ Excellent High level of invasive plant infestation.	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	None
Number of Sample Points		4	
Basal Area Factor		20	
Quadratic Mean Dia. *(inches)*		12	
Total Basal Area *(ft^2/acre)*		95	
Basal Area Range		60-140	***Species to Favor***
Trees per Acre		125	Hickory, cherry, and maple. Possibly plant native fruit-bearing species.
Elevation (feet)		680-780 Δ- 100’	
Aspect		East	

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• None noted		

PLANNED TREATMENTS	
Year	2022
Treatment	INVASIVE SPECIES CONTROL -MECHANICAL • 8.29 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • Apply for NRCS 386 – field border management • (Block 2- see Appendix A)

PLANNED TREATMENTS	
Year	2024
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2022 treatment • 8.29 acres light to moderate infestation

C. Unit 3

Forest Type:	**Northern Hardwood Forest**
Pro-Rated Acres:	**21.08**
Location:	**“Ridge Woods”**

Photo 6: This old stand of trees is beautiful to walk through.

NARRATIVE

The beautiful “Ridge Woods” are named for their prominent location on the top of a ridge on the western side of the property. Several trails pass through the unit and are a pleasure to walk on. As is the case with the remainder of the property, controlling invasive plants is the main goal for the coming planning period. Specifically, an infestation of euonymus clots the southwest entrance to the woods; barberry is gaining ground throughout the stand.

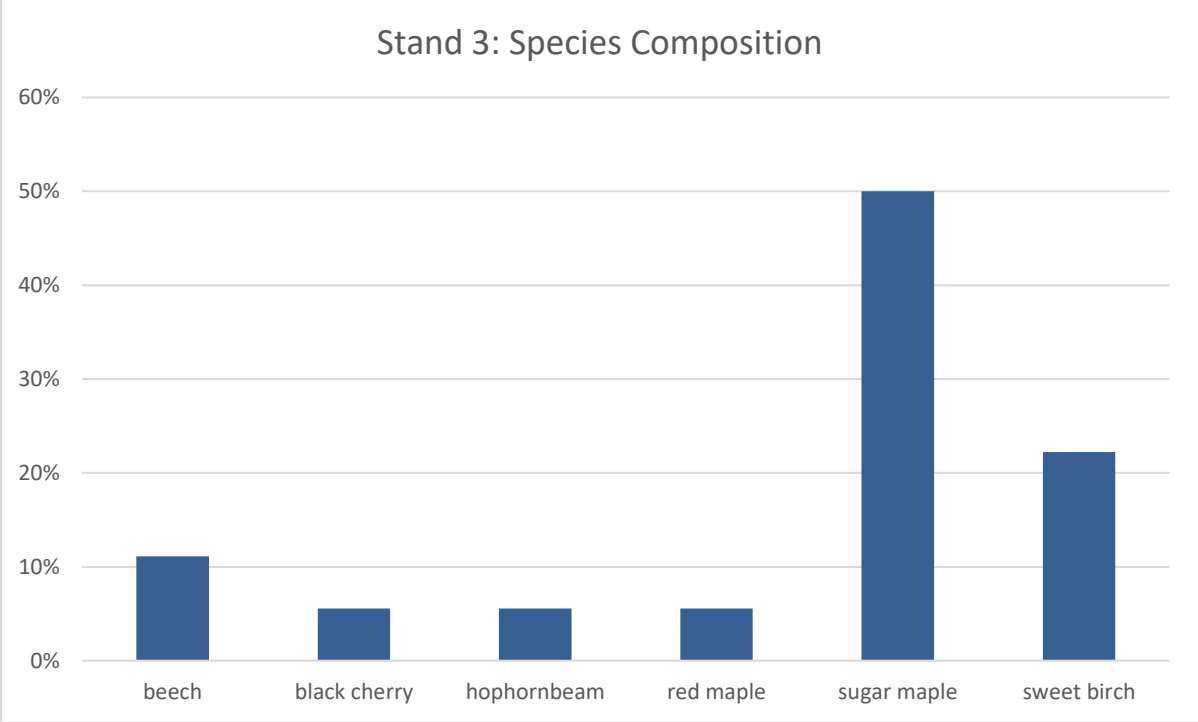
Natural Community Information*

Type: Northern Hardwood Forest
Variant: -
Patch Size: Matrix- dominant in VT's landscape, occupying 1,000 to 100,000 contiguous acres
State Rank: S5= Common & Widespread in the state

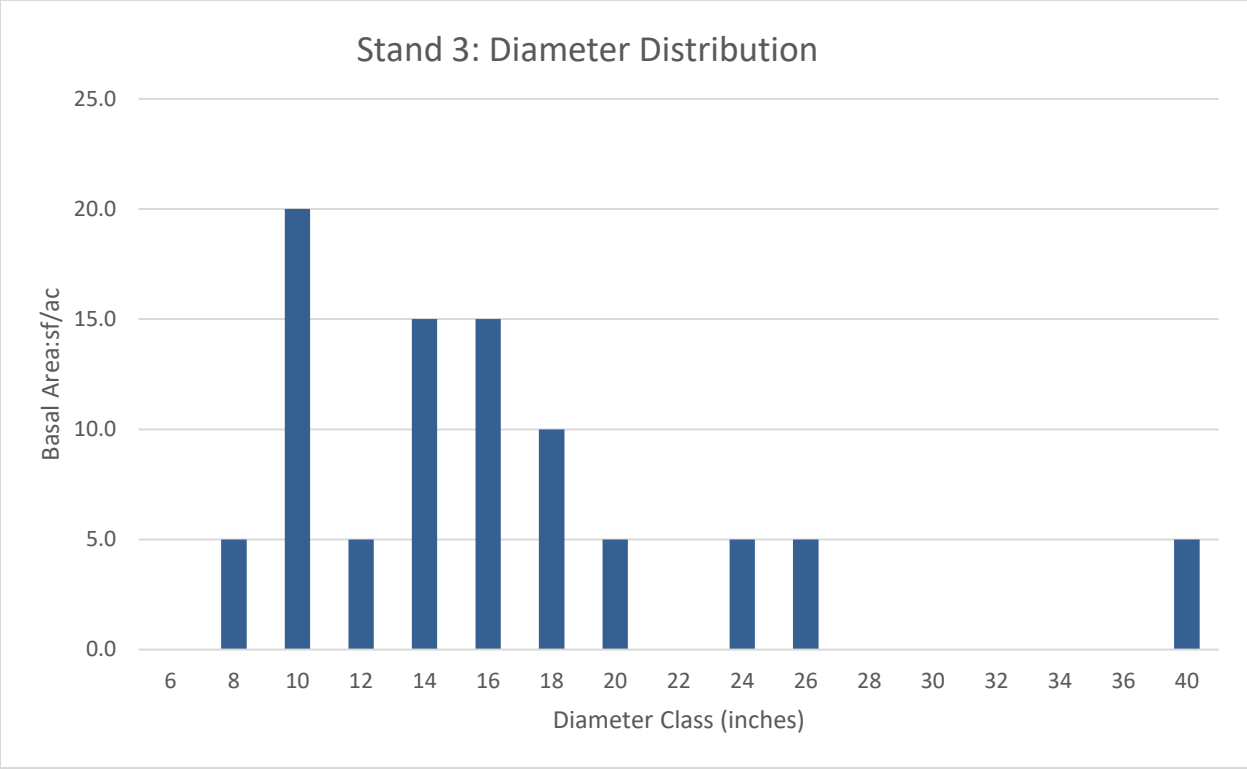
Northern Hardwood Forest

This is Vermont's most abundant forest, the forest that truly characterizes the Northern Hardwood Forest Formation. It blankets hills in every biophysical region of the state and creates a background setting, a so-called matrix, for the smaller communities – the swamps, fens, outcrops, and meadows. It is a broadly defined community type, encompassing a great deal of variation. But there are some things that all expressions of this community share in common. Beech and yellow birch are almost always present. Sugar maple is usually present, but in some cases red maple is more prominent. Most soils are formed in ablation or basal till and are loamy, cool, and moist. These forests are found at elevations below 2,700 feet on gentle to steep slopes.

** Thompson, E.H., Sorenson, E.R. & Zaino, R.J. 2019. Wetland, Woodland, Wildland- A Guide to the Natural Communities of Vermont. The Nature Conservancy, The Vermont Land Trust, and the Vermont Department of Fish & Wildlife. Chelsea Green Publishing, White River Junction, VT.*



- The presence of hophornbeam suggests good, but not great, soil fertility.



- A higher number of smaller diameter trees diminishing as tree diameter increases is referred to as a "J"-shaped curve and suggests an un-even aged condition.

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• No significant management since at least late 1700's
Site Class *(1-4 with 1 being best and 4 being poorest)*	2	***Soil Map Unit(s)***	42 C: Macomber-Taconic Complex
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Honeysuckle, barberry, euonymus	
Observed level of Impact		☐ Low ☐ Medium ☐ High	
Stand Quality & Health ***(Subjective)***		☐ Poor ☒ Average ☒ Excellent	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	Beech

EXISTING UNIT DESCRIPTION		
Number of Sample Points	4	
Basal Area Factor	20	
Quadratic Mean Dia. *(inches)*	13	
Total Basal Area *(ft^2/acre)*	90	
Basal Area Range	40-140	***Species to Favor***
Trees per Acre	94	Transitional and northern hardwoods
Elevation (feet)	720-800 Δ- 80’	
Aspect	Variable	

PLANT OBSERVATIONS AND CONSIDERATIONS *List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.*		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• Wood fern	• sedge	

PLANNED TREATMENTS	
Year	2022
Treatment	INVASIVE SPECIES CONTROL -MECHANICAL • 21.08 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 2- see Appendix A)

PLANNED TREATMENTS	
Year	2024
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2022 treatment • 21.08 acres light to moderate infestation

D. Unit 4

Forest Type:	**Rich Northern Hardwood Forest**
Pro-Rated Acres:	**39.06**
Location:	**"Mile-Around Woods"**

NARRATIVE

The passage below tells of how the Mile-Around Woods got its name, I wonder if Thomas Hall would have guessed in his wildest dreams that his vision for the land would endure like it has and still be cherished and used by the community nearly 250 years later. The community has clearly contained a garlic mustard infestation, but other invasive plants threaten the ecosystem (specifically barberry and honeysuckle); their control will be the focus of management for the coming planning period.

(The following text is quoted from the 2012 Conservation Management Plan)

On November 19, 1779, Thomas Hall acquired 100 acres in North Bennington, including The Mile-Around Woods. The Mile-Around Woods got its name from Trenor Park-Thomas Hall's great-grandson-in-law, a gifted and ambitious lawyer, and a compulsive worker. When Park came home in 1865 from a hectic thirteen years in San Francisco, he suffered a breakdown from overwork. He decided on his own course of therapy: Without cutting a single tree, he would design a road through the hilltop woodlot that was exactly one mile around. He succeeded.

The Mile-Around Woods (as described by the late Edward Flaccus, an ecologist at Bennington College)

1. *Diversity of spring wildflowers. The best area as regards diversity in a reasonably prescribed area, in southwestern Vermont. In fact, it is one of the very best I've ever seen anywhere in New England.*

2. *Old-growth trees. At the lower east edge is a fairly narrow stretch of wood representing relatively undisturbed old-growth, climax Northern Hardwoods. There are a number of very large (2-3' dbh) sugar maples here with tall, forest-grown boles. On this somewhat more protected site a remnant has persisted that has escaped the very extensive wind-throw damage of the '38 hurricane and also has not been disturbed by cutting. Best evidence from a variety of sources indicates the sugar maples are at least 200 years old, therefore dating back to settlement days (more discussion of tree ages later).*

3. *Windthrow. All up the east side of the hill is much pit and mound topography produced by hundreds of years of windthrow. Evidence we have (ages of trees growing on the mounds; condition of rotted stumps; etc.) suggests that the majority of more recent examples date to the hurricane of September 21, 1938.*

4. *Other areas of Mile Round. There are at least 15 species of trees present (see appended presence list), most of which are climax species or intermediate species. There are some very large individuals, or these scattered through the woods: elm, northern red oak, black maple-*

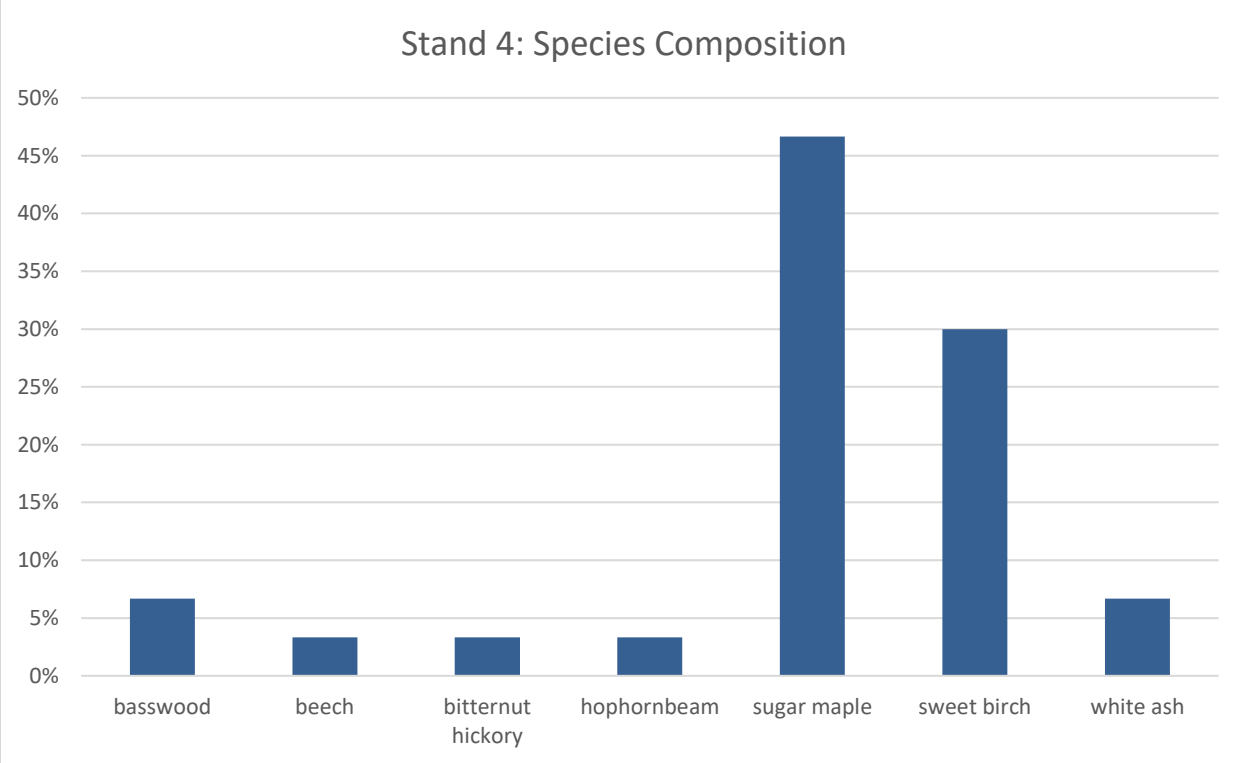
- the latter relatively rare in Vermont and occurring on limey soils) and beech.

Natural Community Information*

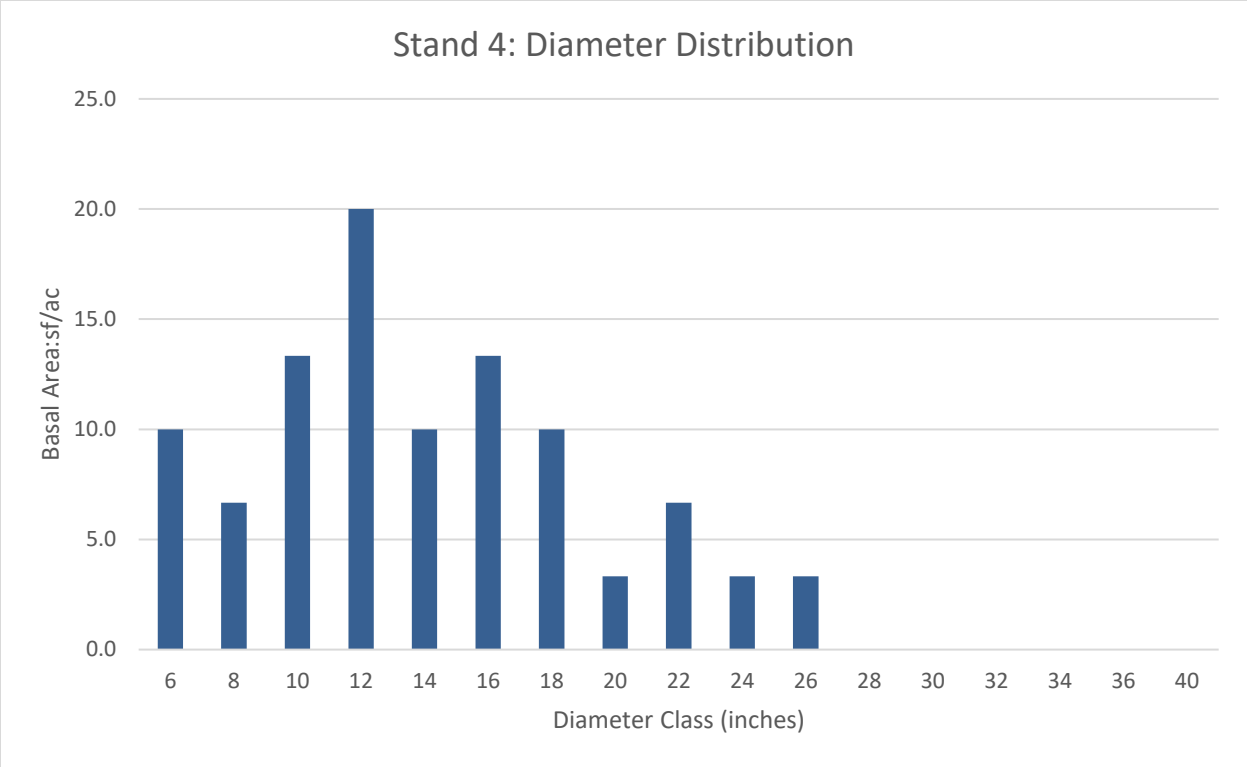
Type: Rich Northern Hardwood Forest
Variant: -
Patch Size: **L**= Large Patch- occurs in the landscape on a scale of 50 to 1,000 acres.
State Rank: S4= Widespread in the state

Rich Northern Hardwood Forest- rich northern hardwood forests are quintessentially Vermont. Sugar maple is abundant, making these forests vital to three of Vermont's economic staples: maple syrup production, forestry, and tourism. Rich northern hardwood forests are places where colluvial processes (downslope movement) or mineral bedrock, or some combination of the two, provides plants with a steady supply of nutrients.

** Thompson, E.H. & Sorenson, E.R. 2000. Wetland, Woodland, Wildland- A Guide to the Natural Communities of Vermont. The Nature Conservancy and the Vermont Department of Fish & Wildlife. University Press of New England, Hanover, NH.*



- There is good diversity among overstory trees.



- There is also good diversity among trees diameters.

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• No significant management since at least late 1700's
Site Class *(1-4 with 1 being best and 4 being poorest)*	1	***Soil Map Unit(s)***	41 C: Galway-Farmington Complex
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Japanese barberry, honeysuckle	
Observed level of Impact		☐ Low ☐ Medium ☒ High	
Stand Quality & Health ***(Subjective)***		☐ Poor ☒ Average ☐ Excellent	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	Beech

EXISTING UNIT DESCRIPTION		
Number of Sample Points	6	
Basal Area Factor	20	
Quadratic Mean Dia. *(inches)*	11	
Total Basal Area *(ft^2/acre)*	100	
Basal Area Range	60-140	***Species to Favor***
Trees per Acre	151	Northern hardwoods, hickory
Elevation (feet)	700-780 Δ- 80'	
Aspect	Northerly	

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• White wood aster	• Christmas fern	• Wood fern

PLANNED TREATMENTS	
Year	2024
Treatment	INVASIVE SPECIES CONTROL -CHEMICAL • 39.06 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 1- see Appendix A)

PLANNED TREATMENTS	
Year	2024
Treatment	Consider constructing a "deer exclosure" to educate the public on negative impacts to the ecosystem due to over-browsing by deer that is seen throughout the property.

PLANNED TREATMENTS	
Year	2026
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2024 treatment • 39.06 acres light to moderate infestation

E. Unit 5

Forest Type:	**White Pine**
Pro-Rated Acres:	**5.99**
Location:	**One section in the center of the property, one section on the southwest part of the property.**

NARRATIVE

Using the passage below, it is estimated that these pines were planted in the early part of the 20th century by Hall Park McCullough. In maturing they are beginning to show signs of decline; red rot fungus was noted in the stand which generally only affects trees with low or reduced vigor (secondary pathogen). Also of note is that, unlike most of the property which has seen minimal human management over time, this unit of pines was thinned, in the 1990's. Evidence of the girdling of some trees may still be seen and some trees "bridged" over their girdles and did not die.

Photo 7: This area of white pines was planted in the early 20th century.

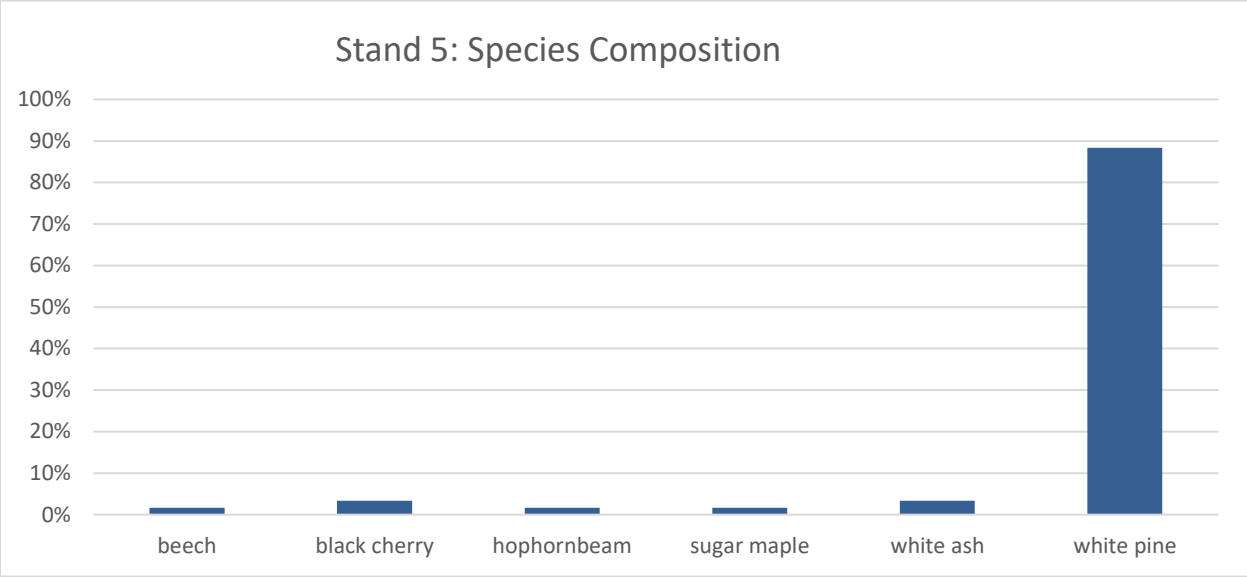
The heavy infestation of invasive plants will be the focus of management for the coming planning period.

2012 Comments (Robert Woolmington)

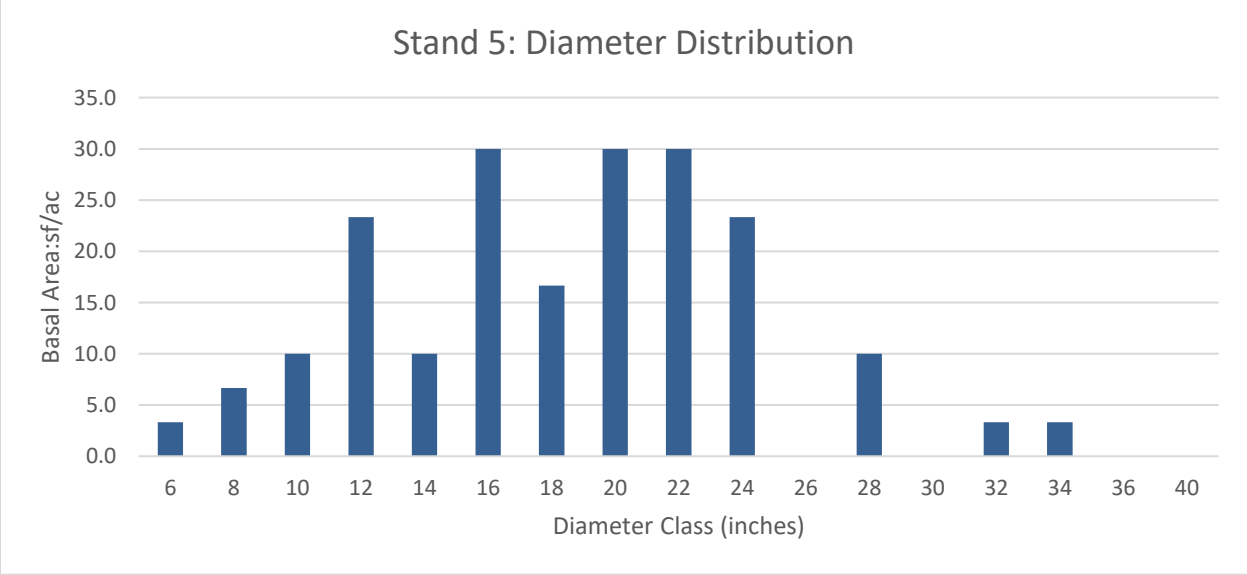
The woodlands associated with the Hall Farm and the Park-McCullough House were historically managed for low intensity forestry and firewood cutting. Hall Park McCullough, the owner of the property for much of the 20th century, took great pride in the woodlands. He arranged for planting a small stand of white pines at the southwest corner of the Woods, but largely refrained from cutting The Mile-Around Woods. He and many of his fellow citizens enjoyed the spectacular show of spring flowers in the Woods.

Natural Community Information*

Type:..... Not discernible due to land use history



- This is a small white pine plantation so very few other species are present in the overstory



- Most of the trees in this unit are between 16-24" in diameter.

<table>
<tr><th colspan="4">EXISTING UNIT DESCRIPTION</th></tr>
<tr><td>Age Class Distribution</td><td>☒ - Even-aged
☐ - Uneven-aged</td><td>Unit History</td><td>• Late 1990's (estimated): Timber stand improvement. Some girdles were bridged.
• Planted at the direction of Hall Park McCullough, probably in the early 1900's.</td></tr>
<tr><td>Site Class (1-4 with 1 being best and 4 being poorest)</td><td>1</td><td>Soil Map Unit(s)</td><td>65 C: Georgia Loam
64 D: Stockbridge Loam</td></tr>
<tr><td colspan="2">Forest Health Concerns
(Insects, disease, physical damage, or invasive plants)</td><td colspan="2">Invasive plant infestation, red rot</td></tr>
<tr><td colspan="2">Invasive Species</td><td colspan="2">Winged euonymus, bittersweet, others</td></tr>
<tr><td colspan="2">Observed level of Impact</td><td colspan="2">☐ Low ☐ Medium ☒ High</td></tr>
<tr><td colspan="2">Stand Quality & Health
(Subjective)</td><td colspan="2">☒ Poor ☐ Average ☐ Excellent
A high level of invasive plant infestation and some red rot noted</td></tr>
<tr><td colspan="2">Sampling Method</td><td>Variable Radius Point Sampling</td><td>Regeneration</td></tr>
<tr><td colspan="2">Sampling Date</td><td>9/2021</td><td rowspan="5">Beech</td></tr>
<tr><td colspan="2">Number of Sample Points</td><td>6</td></tr>
<tr><td colspan="2">Basal Area Factor</td><td>20</td></tr>
<tr><td colspan="2">Quadratic Mean Dia. (inches)</td><td>15</td></tr>
<tr><td colspan="2">Total Basal Area (ft^2/acre)</td><td>200</td></tr>
<tr><td colspan="2">Basal Area Range</td><td>140-300</td><td>Species to Favor</td></tr>
<tr><td colspan="2">Trees per Acre</td><td>160</td><td rowspan="3">White pine</td></tr>
<tr><td colspan="2">Elevation (feet)</td><td>600-740
Δ- 140'</td></tr>
<tr><td colspan="2">Aspect</td><td>West to southwest</td></tr>
</table>

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• Christmas fern		

PLANNED TREATMENTS	
Year	2025
Treatment	INVASIVE SPECIES CONTROL -MECHANICAL • 8.26 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • North Section- Block 1; South Section- Block 3 (see Appendix A)

PLANNED TREATMENTS	
Year	2027
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2025 treatment • 8.26 acres light to moderate infestation

F. Unit 6

Forest Type:	**Rich Northern Hardwood Forest**
Pro-Rated Acres:	**48.63**
Location:	**Southern part of property**

Photo 8: Maples in this unit are being tapped for their sap to make syrup.

NARRATIVE

This unit is classified as a "Rich Northern Hardwood Forest" by the State of Vermont Natural Heritage program. Large, quality hardwoods dominate. A portion of the unit is being tapped for its sap. Management recommendation will focus on:

1. Invasive plant control
2. Trail maintenance of the Short Aldrich Trail

Natural Community Information*

Type: Rich Northern Hardwood Forest
Variant: -
Patch Size: **L**= Large Patch- occurs in the landscape on a scale of 50 to 1,000 acres.
State Rank: S4= Widespread in the state

Rich Northern Hardwood Forest- rich northern hardwood forests are quintessentially Vermont. Sugar maple is abundant, making these forests vital to three of Vermont's economic staples: maple syrup production, forestry, and tourism. Rich northern hardwood forests are places where colluvial processes (downslope movement) or mineral bedrock, or some combination of the two, provides plants with a steady supply of nutrients.

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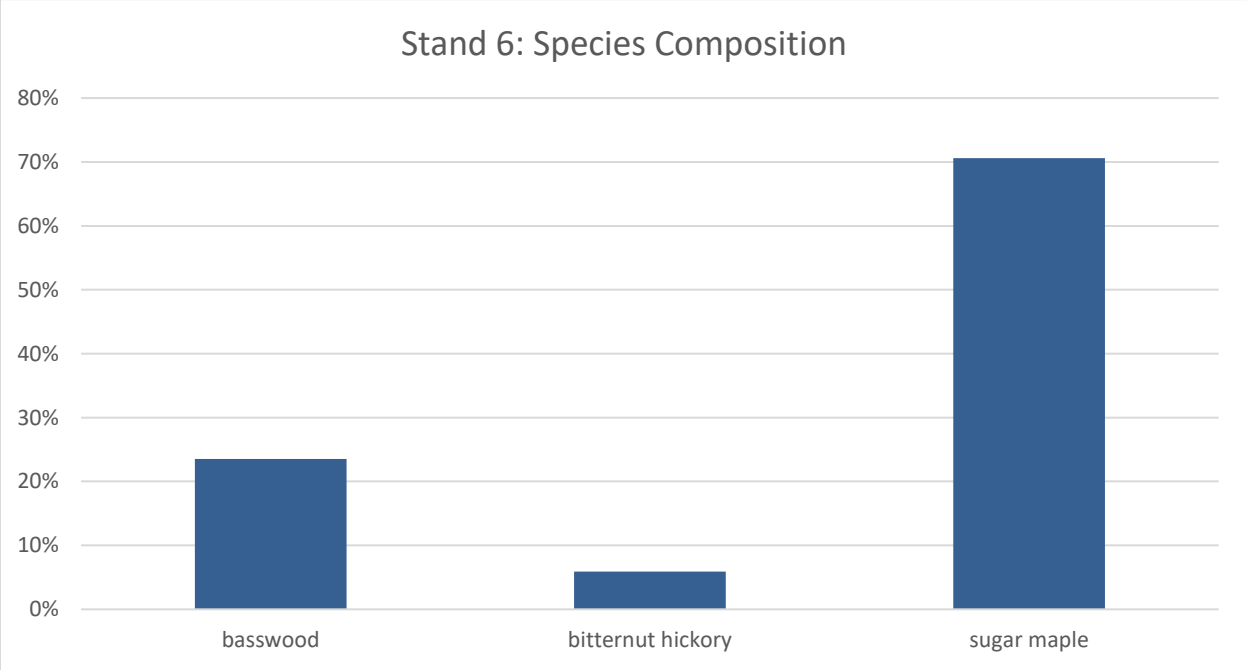
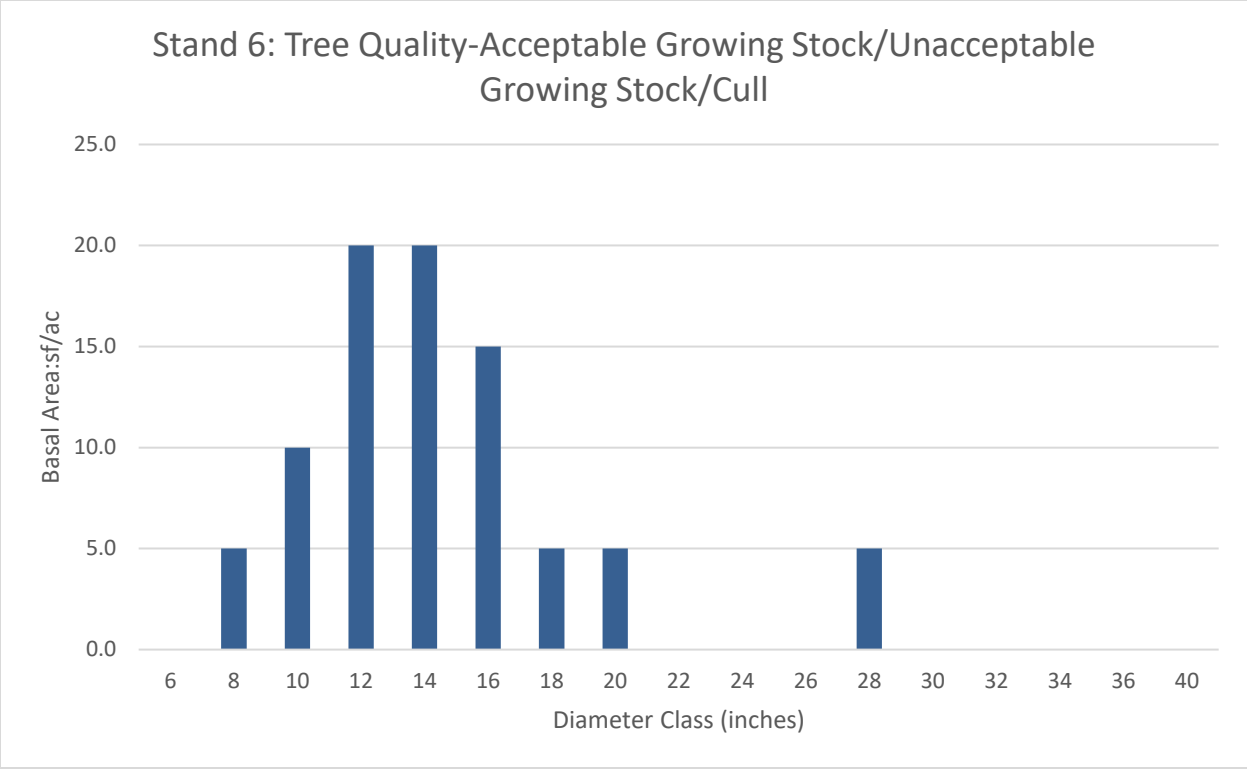


- This is a fertile site with a prevalence of sugar maple.



- A higher number of smaller diameter trees diminishing as tree diameter increases is referred to as a "J"-shaped curve and suggests an un-even aged condition.

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• Classified as a Rich Northern Hardwood Natural Community Type with the State of Vermont.
Site Class *(1-4 with 1 being best and 4 being poorest)*	1	***Soil Map Unit(s)***	64 D: Stockbridge Loam 41 D: Galway-Farmington Complex
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Common buckthorn, honeysuckle	
Observed level of Impact		☐ Low ☐ Medium ☒ High	
Stand Quality & Health ***(Subjective)***		☐ Poor ☒ Average ☐ Excellent	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	Limited

EXISTING UNIT DESCRIPTION		
Number of Sample Points	4	
Basal Area Factor	20	
Quadratic Mean Dia. *(inches)*	13	
Total Basal Area *(ft^2/acre)*	85	
Basal Area Range	60-100	***Species to Favor***
Trees per Acre	94	Northern hardwoods, oak, and hickory.
Elevation (feet)	620-820 Δ- 200’	
Aspect	Southeast	

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• None noted		

PLANNED TREATMENTS	
Year	2022
Treatment	TRAIL MAINTENANCE- Short Aldrich Trail • Repaint trail markers • Clear debris • Repair/replace trail signs as needed.

PLANNED TREATMENTS	
Year	2023
Treatment	INVASIVE SPECIES CONTROL -CHEMICAL • 39.73 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 3- see Appendix A)

PLANNED TREATMENTS	
Year	2025
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2023 treatment • 39.73 acres light to moderate infestation

G. Unit 7

Forest Type:	**Decrepit Scotch pine plantation**
Pro-Rated Acres:	**7.47**
Location:	**Extreme southern tip of property north of Harrington Road**

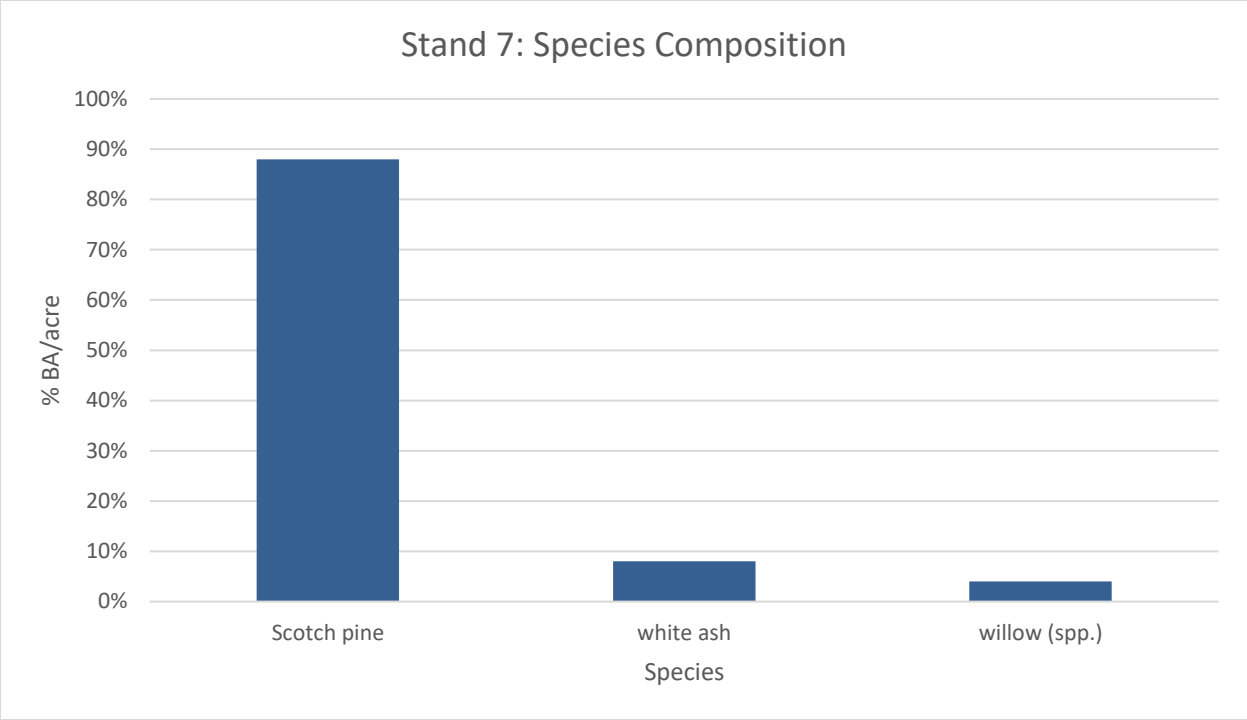
Photo 9: Scotch pines barely cling to existence as aggressive bittersweet vines use them as a trellis to reach for the sun.

NARRATIVE

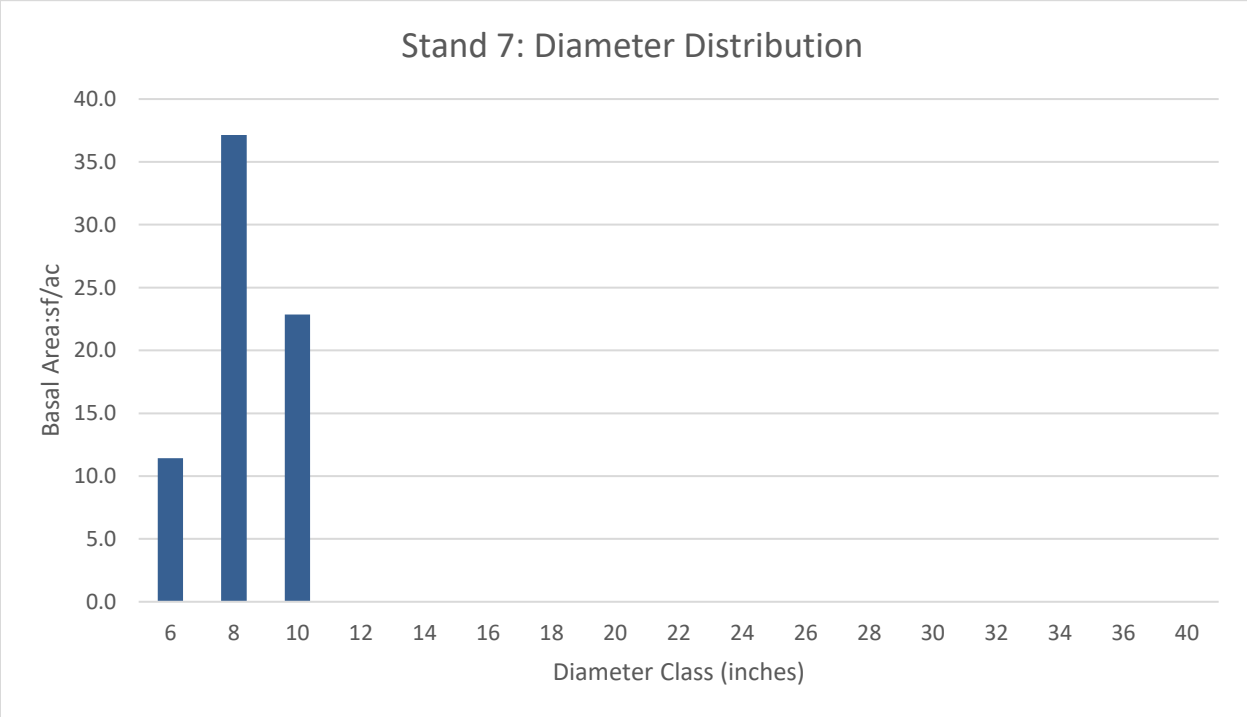
This unit is an unfolding ecological disaster as Scotch pines that were poorly formed to begin with have been overcome by bittersweet vines. Management recommendations will seek to control invasive plants and also to cut the Scotch pines so that the area may be periodically mowed and provide early successional and pollinator habitat. Eventually, it will be on the same mowing schedule as adjacent Unit 11.

Natural Community Information*

Type: Not discernible due to land use history



- Planted scotch pine dominate this area.



- Most of the trees are of small diameter.

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• Poor quality Scotch pine plantation. Planting date uncertain.
Site Class *(1-4 with 1 being best and 4 being poorest)*	1	***Soil Map Unit(s)***	64 C: Stockbridge Loam 66 B: Georgia Loam
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Bittersweet	
Observed level of Impact		☐ Low ☐ Medium ☒ High	
Stand Quality & Health ***(Subjective)***		☒ Poor ☐ Average ☐ Excellent **Extreme invasive plant infestation**	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	None
Number of Sample Points		7	
Basal Area Factor		20	
Quadratic Mean Dia. *(inches)*		8	
Total Basal Area *(ft^2/acre)*		71	
Basal Area Range		20-180	***Species to Favor***
Trees per Acre		207	Early successional species
Elevation (feet)		560-600 Δ- 40’	
Aspect		southeast	

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• Golden rod		

PLANNED TREATMENTS	
Year	2026
Treatment	INVASIVE SPECIES CONTROL -CHEMICAL • 7.47 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 3- see Appendix A)

PLANNED TREATMENTS	
Year	2026
Treatment	CREATE EARLY SUCCESSIONAL HABITAT • Apply to NRCS for 7.47 acre under practice #647 • Sever all stems with the exception of native willow present. • Girdle 1-2 trees per acre to create snag habitat. • Fell 1-2 trees per acre and leave whole as coarse woody debris.

PLANNED TREATMENTS	
Year	2028
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2026 treatment • 7.47 acres light to moderate infestation

H. Unit 14

Forest Type:	**Rich Northern Hardwood Forest (TNC)**
Pro-Rated Acres:	**16.65**
Location:	**The Nature Conservancy (TNC) conserved portion of the southern part of the property**

NARRATIVE

This is essentially the same forest as Unit 6 but because it is conserved by The Nature Conservancy it is treated as a different management unit. With these special management considerations connected to the easement, it was decided to break it out as its own unit for the sake of compliance with the easement.

Photo 10: This unit is protected by a Nature Conservancy easement.

(The following description of Unit 14 was written in the 1970s by Dr. Flaccus of Bennington College and is quoted from the 2012 Conservation Management Plan. Based on Dr. Flaccus' recommendation to the then-landowners, this land was conveyed to The Nature Conservancy (TNC). The parcel was conveyed by TNC to The Fund for North Bennington in 2000.

The Ridge Woods

[Southwest] of the Mile Round, across the old-field gap is a woods covering the NE-SW trending ridge running toward the [Bennington] sewage treatment plant. On the top and downslope on the west to a stone wall is a stretch of old-growth forest which includes trees of very unusual size and age. Most of the biggest of these are sugar maples 2-3' dbh, and they are 200 or more years of age. A couple of large white ash in the area were victims of the summer '78 wind. Continuing to the SW one comes to a southerly sloping hill down to the present pasture at its foot. On this south-facing slope, as one would expect~ there

is an increase in numbers of northern red oak, bitternut, and shagbark hickory, and even a white oak or two.

One northern red oak has a dbh of 47"-- one of the biggest forest-grown oaks I've seen, which I would estimate to be 200 or so yrs. old.

Because of some initial disagreement as to age of 2–3-foot, forest-grown sugar maples, I took some partial cores. Estimates from these, using a couple of alternative methods of calculation, are (1) 32" dbh tree: 200+ years; (2) 36.5" dbh tree: low estimate 265 yrs.; high estimate 312+ yrs.

I regard this area as having a very unusual stand that is truly old growth dating back to settlement or pre-settlement days. There is of course no way of being absolutely certain that it has not been disturbed in its existence. But what evidence there is to go on suggests to me that it has very likely not been appreciably disturbed by man. While I cannot claim to have been in every woodland in southern Vermont, I have been in many areas and have not seen anything comparable.

There follows some comments about the stand:

1. *"All-aged" (or better many-aged). My interpretation is that it is essentially "all-aged" (many aged), which is characteristic of old-growth, climax, or virgin stands. There are sugar maple stems of a variety of diameters.*

2. *High proportion of sugar maple at NE end. This does not indicate necessarily that other species were cut out. In fact, the older an old-growth stand is in the Northern Hardwood Region the more likely it is to show high proportions of either sugar maple or beech; this is because these are the two species with the highest Climax Adaptation Numbers (most shade-tolerant, hence most able to reproduce in their own shade)*

3. *Sugar bush or not. There is no way of telling whether the older maples were at some point in earlier life ever tapped. So, this question cannot be answered with absolute certainty. But evidences suggesting sugar bush are lacking. The trees have neither the broad crowns nor even wide spacing one associates with sugar bushes, nor the shrub and herb species (shrub diversity; hay scented fern, for example). There are no visible remains of wood roads, etc. The whole appearance of the stand rather indicates forest-growing conditions. There are no cut stump remains in this area; that assures us there has been no cutting in, say the last 50 years. (There are a few cut stumps lower on the south-facing slope near the pasture.)*

4. *Prevalence of windthrow. The many soil pit-mounds, especially on the ridgetop suggest to me that the large trees on that (east) edge of the ridge were blown down. Some with stumps rotted the appropriate amount implicate again the hurricane of 1938. Since this site is more exposed than the 'lower part of the Mile Round (with sugar maples of comparable size), the wider spacing of trees and their lack on the top might well be a result of higher windthrow frequency.*

5. *Site quality. This is not as good a site for forest growth as the lower Mile Round; the latter is lower - more mesic - more protected. East slopes are generally more mesic (moist) than west*

slopes, and the Ridge Woods is on a slope to the west. Nevertheless, the soils are here as in the Mile Round are influenced by limestone-dolomite outcrops, resulting in limier soils and better growth of sugar maple than on acid-igneous derived soils (as in the Green Mountains).

6. *<u>Understory growth.</u> As is to be expected in climax stands of Northern Hardwood the shrub layer is depauperate (relatively few species of shrubs can put up with either the degree of shade or the competition from sugar maple reproduction). I have not visited this area in spring so cannot speak to the question of the richness of spring flora; at this time of year [October]much, in some cases all, of the remains are gone. Even so, appreciable amounts of some the more persistent ones-- e.g., wild ginger, hepatica, Streptopus, etc. were noted.*

In summary then, I regard the Ridge Woods stand as a very unusual one. Though small, it is in my opinion very important, since essentially undisturbed stands are all but non-existent at lower altitudes in Vermont (as true or even more so in all the other New England states). I believe it is essential to get some examples--small though they might be-- set aside as examples of what climax forest is and how it behaves as a system.

Should it prove possible to withdraw a piece from the cutting to be pre-served for this and future generations, I would regard it as a great contribution. Saving a tree here and there, or even saving a narrow strip or very small patch, is hardly worth doing.

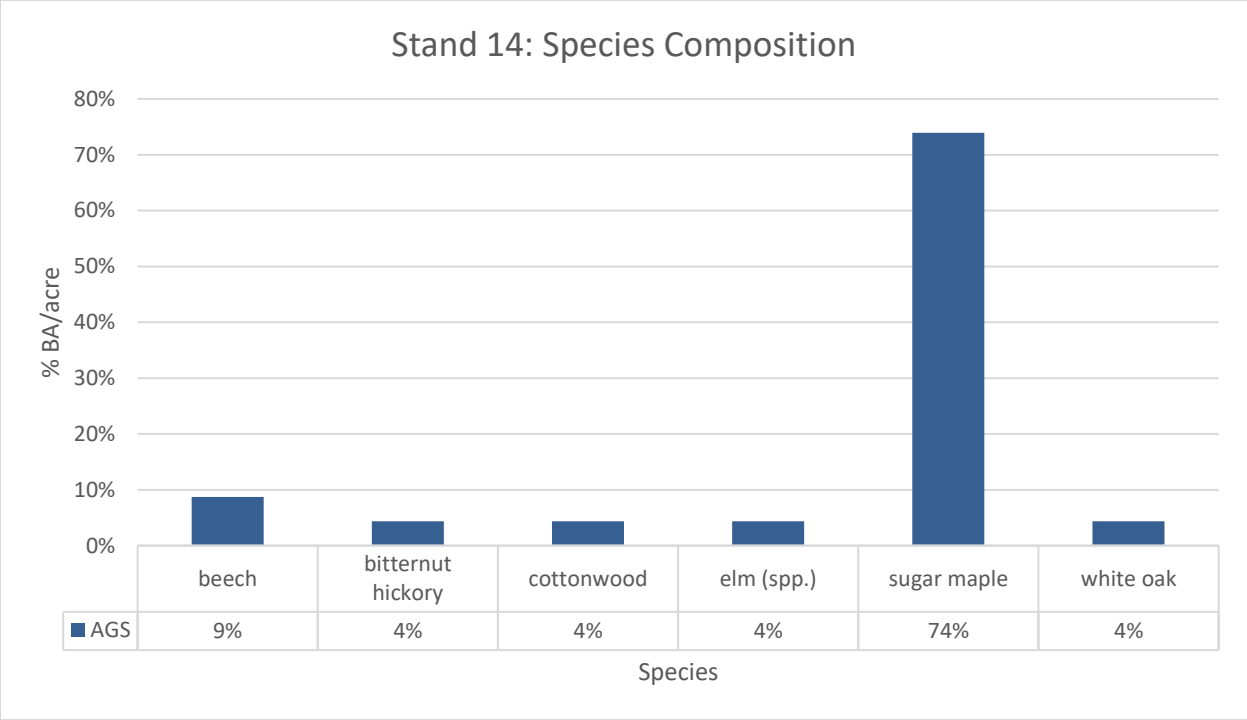
My suggestion would be a piece approximately 200 yards wide running from the north end southwest along the ridge and down the south-facing slope to the pasture.
I have not had time to pace this carefully, but my guess is it might amount to 15-20 acres.

<u>Natural Community Information</u>*

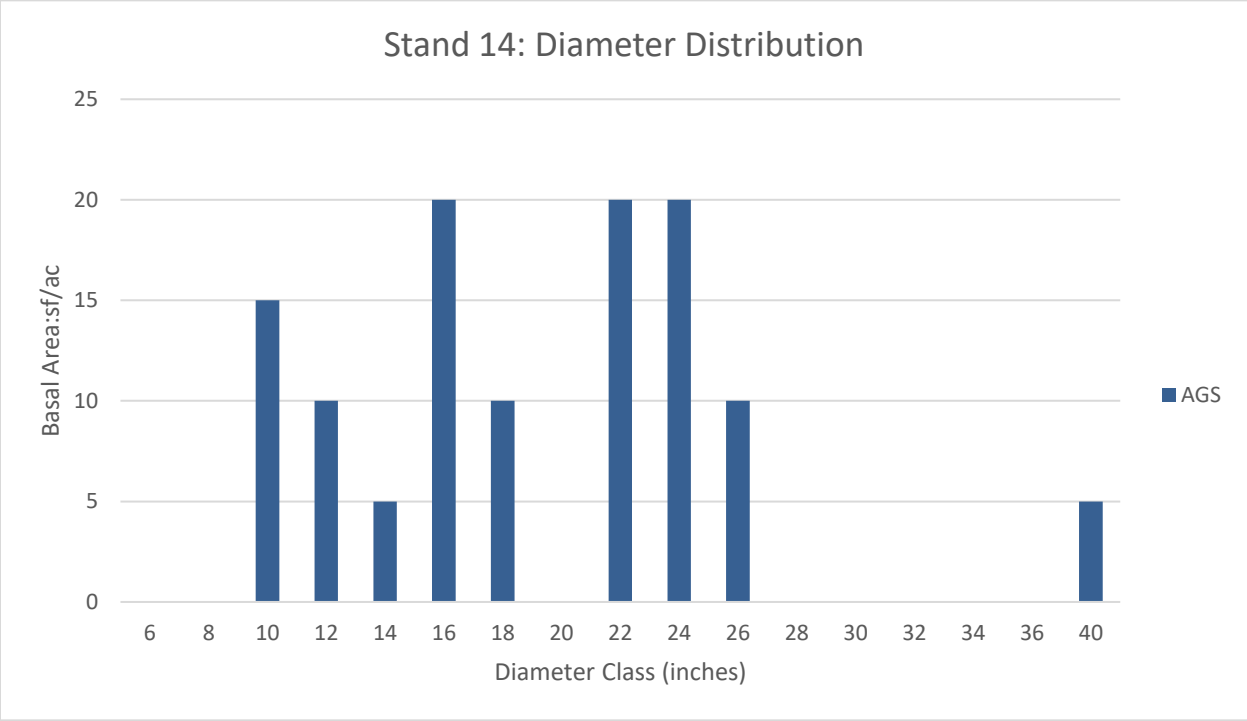
Type: Rich Northern Hardwood Forest
Variant: -
Patch Size: **L**= Large Patch- occurs in the landscape on a scale of 50 to 1,000 acres.
State Rank: S4= Widespread in the state

<u>Rich Northern Hardwood Forest</u>- rich northern hardwood forests are quintessentially Vermont. Sugar maple is abundant, making these forests vital to three of Vermont's economic staples: maple syrup production, forestry, and tourism. Rich northern hardwood forests are places where colluvial processes (downslope movement) or mineral bedrock, or some combination of the two, provides plants with a steady supply of nutrients.

** Thompson, E.H. & Sorenson, E.R. 2000. <u>Wetland, Woodland, Wildland- A Guide to the Natural Communities of Vermont.</u> The Nature Conservancy and the Vermont Department of Fish & Wildlife. University Press of New England, Hanover, NH.*



- There is good diversity among overstory trees.



- A wide array of tree diameters suggests good structure for wildlife.

EXISTING UNIT DESCRIPTION			
Age Class Distribution	☒ - Even-aged ☐ - Uneven-aged	***Unit History***	• Preserved by The Nature Conservancy
Site Class *(1-4 with 1 being best and 4 being poorest)*	1	***Soil Map Unit(s)***	64 D: Stockbridge Loam 41 D: Galway-Farmington Complex
Forest Health Concerns *(Insects, disease, physical damage, or invasive plants)*		Invasive plant infestation	
Invasive Species		Barberry, honeysuckle ,winged euonymus	
Observed level of Impact		☐ Low ☐ Medium ☒ High	
Stand Quality & Health ***(Subjective)***		☐ Poor ☒ Average ☐ Excellent	
Sampling Method		Variable Radius Point Sampling	***Regeneration***
Sampling Date		9/2021	Beech
Number of Sample Points		4	
Basal Area Factor		20	
Quadratic Mean Dia. *(inches)*		16	
Total Basal Area *(ft^2/acre)*		115	
Basal Area in Acceptable Growing Stock *(ft^2/acre)*		100	
Basal Area in Unacceptable Growing Stock *(ft^2/acre)*		15	
Basal Area Range		80-180	***Species to Favor***
Trees per Acre		82	Northern hardwoods
Elevation (feet)		640-840 Δ- 200’	
Aspect		Southwest	

PLANT OBSERVATIONS AND CONSIDERATIONS		
List below represents qualitative observations. The time of year that the forest cruise was completed (winter, spring, summer, and fall) will have an effect on the types of plants noted.		
Data collected: during growing season: ☒; during dormant season: ☐; during snow cover: ☐		
• Grape vines		

PLANNED TREATMENTS	
Year	2022
Treatment	TRAIL MAINTENANCE- Short Aldrich Trail • Repaint trail markers • Clear debris • Repair/replace trail signs as needed.

PLANNED TREATMENTS	
Year	2023
Treatment	INVASIVE SPECIES CONTROL - CHEMICAL • 39.73 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • (*This work or any alternative treatment other than removal by hand cannot be undertaken without prior review and approval by The Nature Conservancy)* • (Block 3- see Appendix A)

PLANNED TREATMENTS	
Year	2025
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2023 treatment • 39.73 acres light to moderate infestation

I. Unit 8

EXISTING STAND DESCRIPTION

Note: Data was not collected for non-forested areas like wetlands and open/idle lands, so the format of the following "Existing Stand Descriptions" has been changed to reflect that.

Forest Type:	**"Monarch Meadow" (Open/Idle)**
Pro-Rated Acres:	**5.20**
Location:	**Central part of property**

Age Class Structure:	n/a
Site Class:	2
Site Index or Soil Series:	66 B: Georgia Loam

Natural Community Information*

Type: Not discernible due to land use history

Ecologically Significant Feature(s) to be Protected:

- Pollinator habitat; shrubland bird forest-field intersection habitat

Justification/verification/Documentation for management goals of unit:

- History of rare butterfly species in greater area; identification of several endangered bird species.
- Area defined using LiDAR imagery and information gathered in the field.

Stand Health (include threats to Ecologically Significant Feature):

- Good. Plans to enhance plant species favored by multiple pollinators and other invertebrates of importance to the ecosystem.

Stand History:

- Periodically mown to maintain as grassland and early successional habitat.
- The notable herringbone pattern in Monarch Meadow is the result of long-standing ditches placed to drain wet areas for agricultural purposes.

DESIRED FUTURE CONDITION

- Maintained as grassland to early successional habitat stage of development.
- Control invasive plants (NRCS practice #314)
- Enhance meadow habitat (NRCS practice #327)

PLANNED TREATMENTS

Scheduled Protective/Conservation Treatments:

PLANNED TREATMENTS	
Year	2022
Treatment	INVASIVE SPECIES CONTROL - CHEMICAL • 5.20 acres moderate infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 2- see Appendix A)

PLANNED TREATMENTS	
Year	2023
Treatment	ESTABLISH POLLINATOR HABITAT • Apply for NRCS practice E420A to enhance pollinator habitat.

PLANNED TREATMENTS	
Year	2024
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2022 treatment • 5.20 acres light to moderate infestation

J. Unit 9

EXISTING STAND DESCRIPTION

Forest Type:	**Red Maple-Black Ash Swamp**
Pro-Rated Acres:	**12.82**
Location:	**Central and north-central part of property.**

Age Class Structure:	n/a
Site Class:	1
Site Index or Soil Series:	68 B: Massena Silt Loam; 66 B: Georgia Loam

Photo 11: Swamp white oak is also present in the swamp.

Natural Community Information*

Type: Red Maple-Black Ash Swamp
Patch Size: **L**= Large Patch- occurs in the landscape on a scale of 50 to 1,000 acres.
State Rank: S4= Widespread in the state

Red Maple- Black Ash Swamp- red maple-black ash swamps are widespread in Vermont and are one of our most common wetland types. This is a broadly defined community type that includes much variability. They are more common at lower elevations and in the warmer regions of the state. They occur in perched depressions, which receive surface water runoff but are isolated from the regional groundwater table. They also occur in depressions where the groundwater table meets the ground surface causing seasonal inundation or saturation, as well as on slopes where groundwater seeps to the surface and along rivers and streams that are seasonally flooded.

** Thompson, E.H. & Sorenson, E.R. 2000. Wetland, Woodland, Wildland- A Guide to the Natural Communities of Vermont. The Nature Conservancy and the Vermont Department of Fish & Wildlife. University Press of New England, Hanover, NH.*

Ecologically Significant Feature(s) to be Protected:

- Vermont State mapped wetland

Justification/verification/Documentation for management goals of unit:

- The Mile-Around Wood's riparian western edge sharply borders early successional/old field hayland. Invasives interfere with a planned native plant restoration needed to soften this 2.3-acre rectangular transition zone.
- Shrub swamps and forest edge regions with waterways such as this provide important riparian wildlife corridors plus breeding habitat for multiple threatened Vermont shrubland bird species.
- Area defined using LiDAR imagery and information gathered in the field.

Stand Health (include threats to Ecologically Significant Feature):

- Good

Stand History:

- No history of management.

DESIRED FUTURE CONDITION

- Functioning wetland habitat
- Functioning shrubland bird transition zone

Scheduled Protective/Conservation Treatments:

PLANNED TREATMENTS	
Year	2025 (9b & 9c)
Treatment	INVASIVE SPECIES CONTROL - CHEMICAL • 10.53 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • Apply for NRCS wetland management practice #644 • (Block 1 & 2- see Appendix A)

PLANNED TREATMENTS	
Year	2026 (9a)
Treatment	INVASIVE SPECIES CONTROL - MECHANICAL • 2.29 acres heavy infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 1 & 2- see Appendix A)

PLANNED TREATMENTS	
Year	2027 (9b & 9c)
Treatment	INVASIVE SPECIES CONTROL- CHEMICAL • Follow up to 2025 treatment • 10.53 acres light to moderate infestation

PLANNED TREATMENTS	
Year	2028 (9a)
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2026 treatment • 2.29 acres light to moderate infestation

K. Unit 11

EXISTING STAND DESCRIPTION

Forest Type:	**Open/Idle**
Pro-Rated Acres:	**1.16**
Location:	**Southern part of property.**

Age Class Structure:	n/a
Site Class:	2
Site Index or Soil Series:	66 B: Georgia Loam

Natural Community Information*

Type: Not discernible due to land use history

Ecologically Significant Feature(s) to be Protected:

- Early successional habitat

Justification/verification/Documentation for management goals of unit:

- Area defined using LiDAR imagery and information gathered in the field.

Stand Health (include threats to Ecologically Significant Feature):

- Fair (presence of invasive plants)

Stand History:

- Abandoned agriculture

DESIRED FUTURE CONDITION

- Grassland to Early successional habitat.

PLANNED TREATMENTS

Scheduled Protective/Conservation Treatments:

- **Delay annual mowing until after August 15th.**

PLANNED TREATMENTS	
Year	2026
Treatment	INVASIVE SPECIES CONTROL -CHEMICAL • 3.8 acres moderate infestation • Apply for NRCS brush management practice (chemical) #314 • (Block 3- see Appendix A)

PLANNED TREATMENTS	
Year	2028
Treatment	INVASIVE SPECIES CONTROL-CHEMICAL • Follow up to 2026 treatment • 3.8 acres light to moderate infestation

L. *Other Management Units*

Unit #	Acres	Type	Comments
10	106.39	Agricultural Lands	• Control invasive plants. (Block 1 & 2- see Appendix A) • Plant native plants like gray dogwood, serviceberry, and highbush blueberry and high-bush cranberry to stabilize site and rebuild hedgerow habitat.

Photo 12: Majestic views are never far away on this property.

V. SUMMARY OF MANAGEMENT ACTIVITIES

Upon the signing of this management plan, the *required* management activities in this table become **binding** and the landowner will be expected to complete the activities which are supervised by the county forester as part of the use value appraisal program (current use). We here at Long View Forest will make every effort to notify you when practices are due. However, the responsibility for ensuring that practices get completed in the timeframe stated ultimate falls upon the landowner.

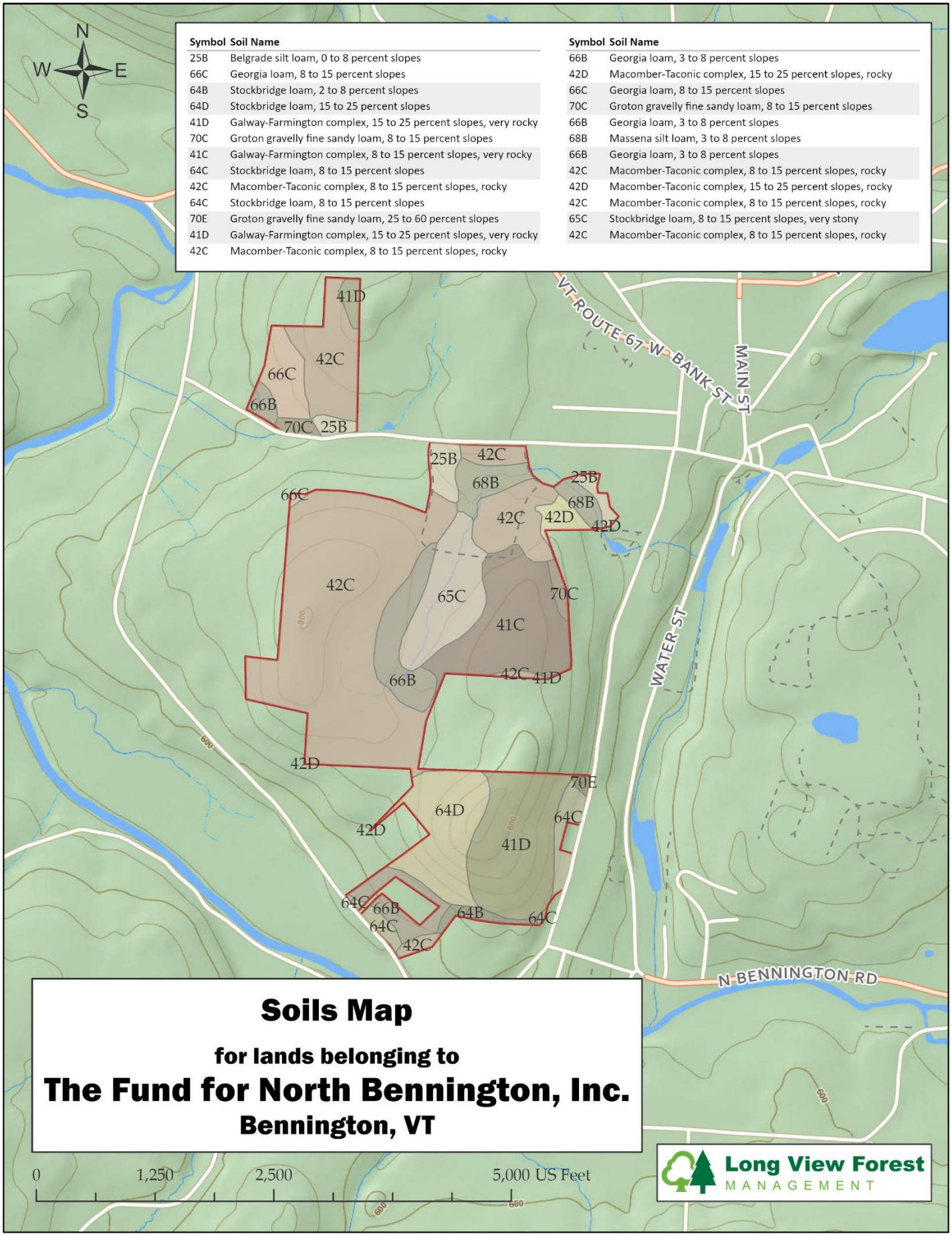
Year *(Plus, or minus three years)*	***Unit***	***Activity***	***Reason***	***NRCS Practice Code***	***Amount***
2022	6, 14	TRAIL MAINTENANCE	Maintain recreational experience	-	-
2022	2, 3, 8, 10e	INVASIVE SPECIES CONTROL (Block 2- see Appendix A)	Promote native species	314/386	21 acres- Moderate, chemical 20 acres – heavy, mechanical
2023	8	ENHANCE MEADOW HABITAT	Promote butterfly habitat	327	5 acres
2023	6, 14	INVASIVE SPECIES CONTROL (Block 3- see Appendix A)	Promote native species	314	56 acres- Heavy chemical
2023	1, 2, 3, 4, 5, 6, 10e, 14	PLANTING	Stabilize site with native species	645/644/612	10e- 2-4 acres 1, 2, 3, 4, 5, 6, 14- TBD
2023	8	ESTABLISH POLLINATOR HABITAT	Rare butterflies noted in greater area	E420A	5 acres
2024	4	INVASIVE SPECIES CONTROL (Block 1- see Appendix A)	Promote native species	314	39 acres- Heavy chemical
2024	2, 3, 8, 10e	INVASIVE SPECIES CONTROL- Follow up	Promote native species	314/386	41 acres- light, chemical
2025	5, 9b, 9c, 10b, 10c, 10d	INVASIVE SPECIES CONTROL (Blocks 1, 2, 3- see Appendix A)	Promote native species	314/386	20 acres- heavy, chemical
2025	6, 14	INVASIVE SPECIES CONTROL- Follow up	Promote native species	314	56 acres- moderate to light, chemical
2026	4	INVASIVE SPECIES CONTROL- Follow up	Promote native species	314	39 acres- moderate to light, chemical
2026	1, 7. 9a, 10a	INVASIVE SPECIES CONTROL (Blocks 2, 4- see Appendix A)	Promote native species	314/386	10 acres- moderate, chemical
2027	5, 9b, 9c, 10b, 10c, 10d	INVASIVE SPECIES CONTROL- Follow up	Promote native species	314/386	20 acres- moderate to light, chemical
2028	1, 7, 9a, 10a	INVASIVE SPECIES CONTROL- Follow up	Promote native species	314/386	10 acres- light, chemical
2032	All	Update forest management plan	UVA Requirement	CAP 106	311.18
Annual	11	DELAYED MOWING	Promote grassland and pollinator habitat	-	-

Notes:

1. This list is a summary designed for quick reference. Details are included in the main body of the management plan.
2. Implementation of management activities may require a year or more of advanced planning. The planning phases for commercial timber sales or applications for cost-share funding can be especially lengthy. For this reason, the planning phase of any forest management activity should be initiated well in advance of the recommended date of completion.

Recommended activities should also be done as part of good stewardship but are **not binding**:

Year	*Activity*	*Reason*
2028	Property boundary maintenance	Part of good land stewardship
	Repaint or install new trail markers	Part of regular maintenance
	Consider establishing continuous forest inventory plots (CFI)	Establish record of growth and change in the forest
	Consider constructing a “deer exclosure” in the western part of Unit 4	Such an exclosure would serve to educate the public on the negative impacts to the ecosystem due to over-browsing by deer.



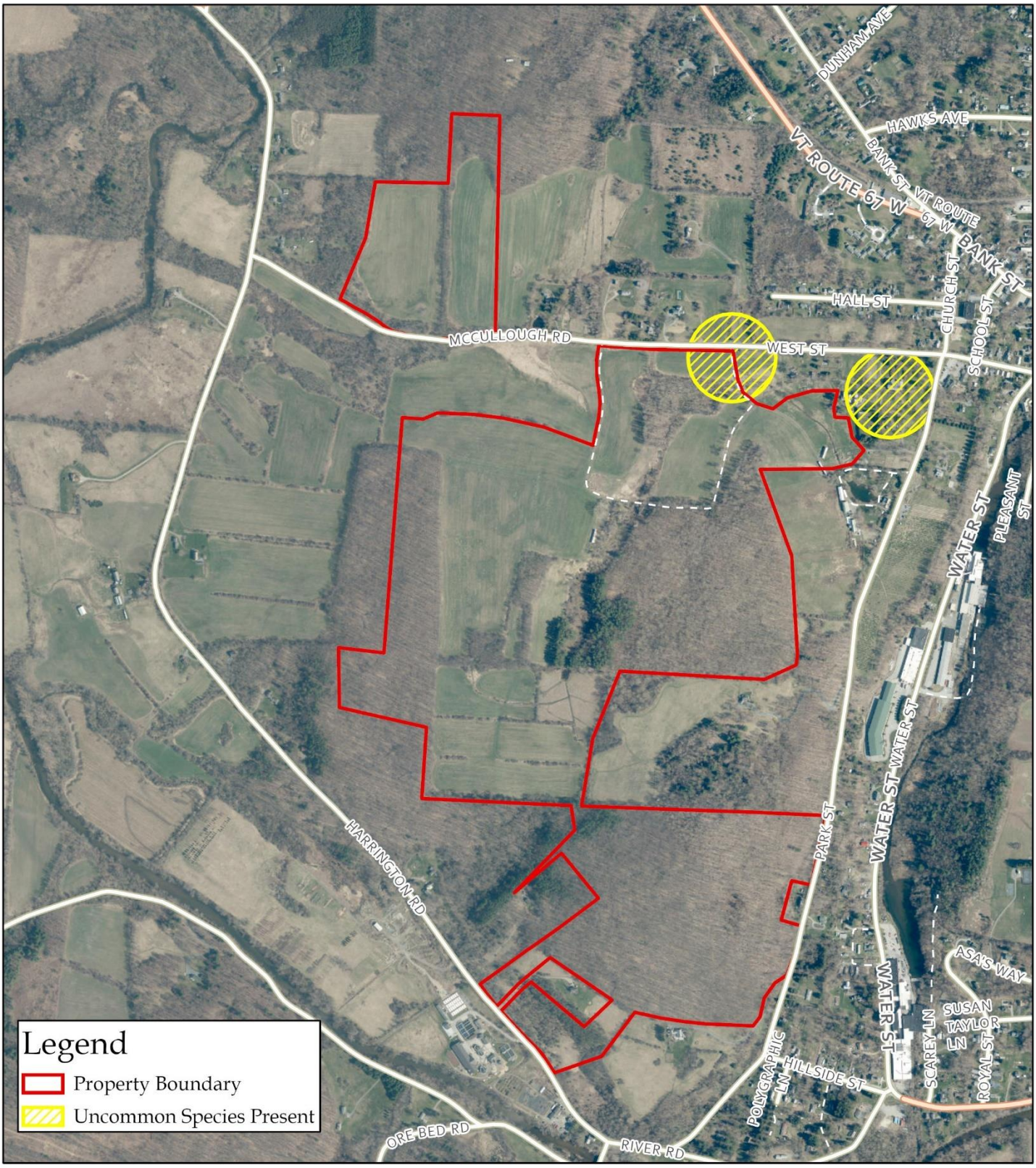
Soils Map

for lands belonging to

The Fund for North Bennington, Inc.

Bennington, VT

Long View Forest MANAGEMENT



N
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Map of Wildlife Habitat & R.T.E.s

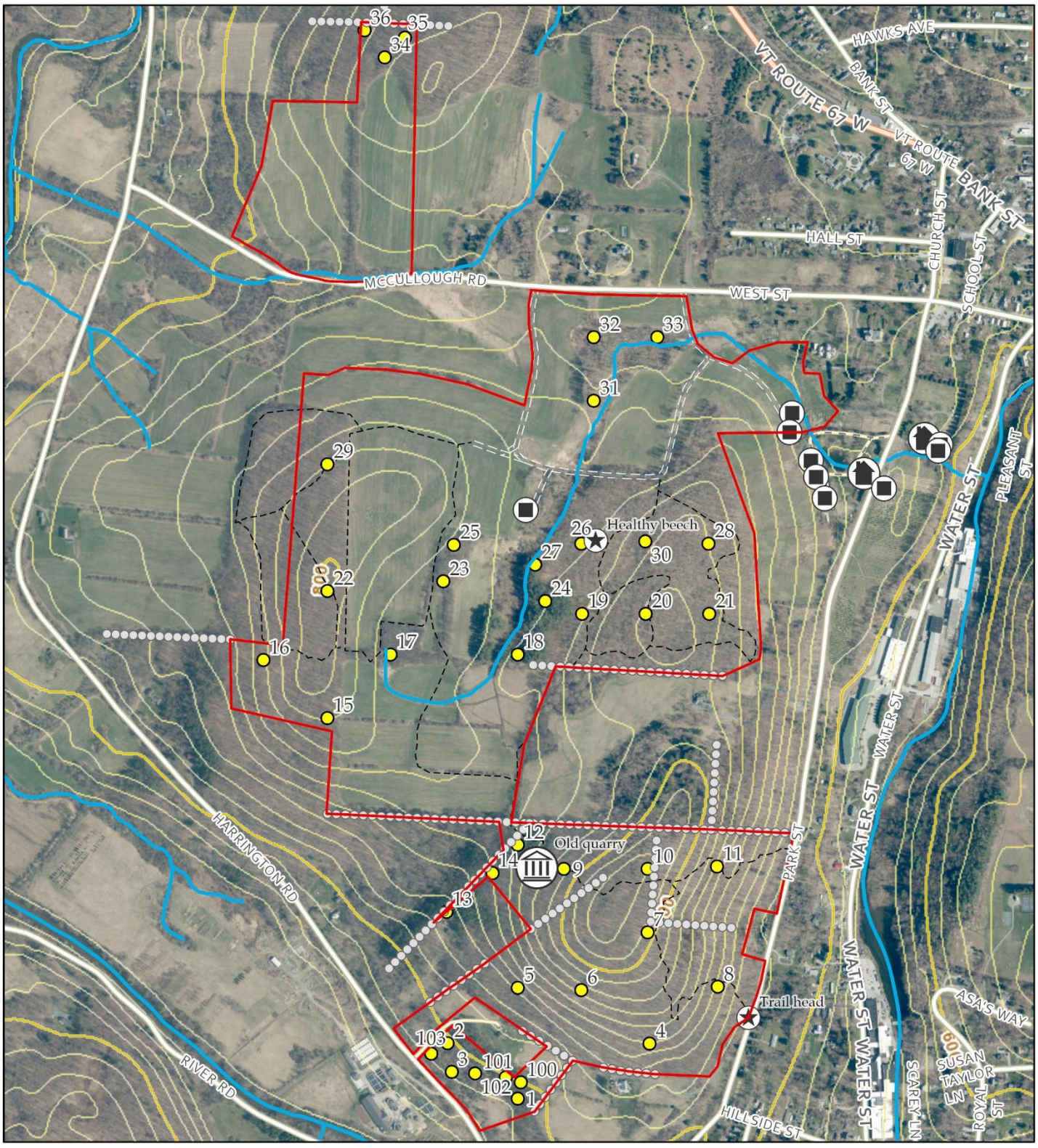
for lands belonging to

The Fund for North Bennington, Inc.

Bennington, VT

0 1,000 2,000 4,000 US Feet

Long View Forest MANAGEMENT



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Forest Inventory Map

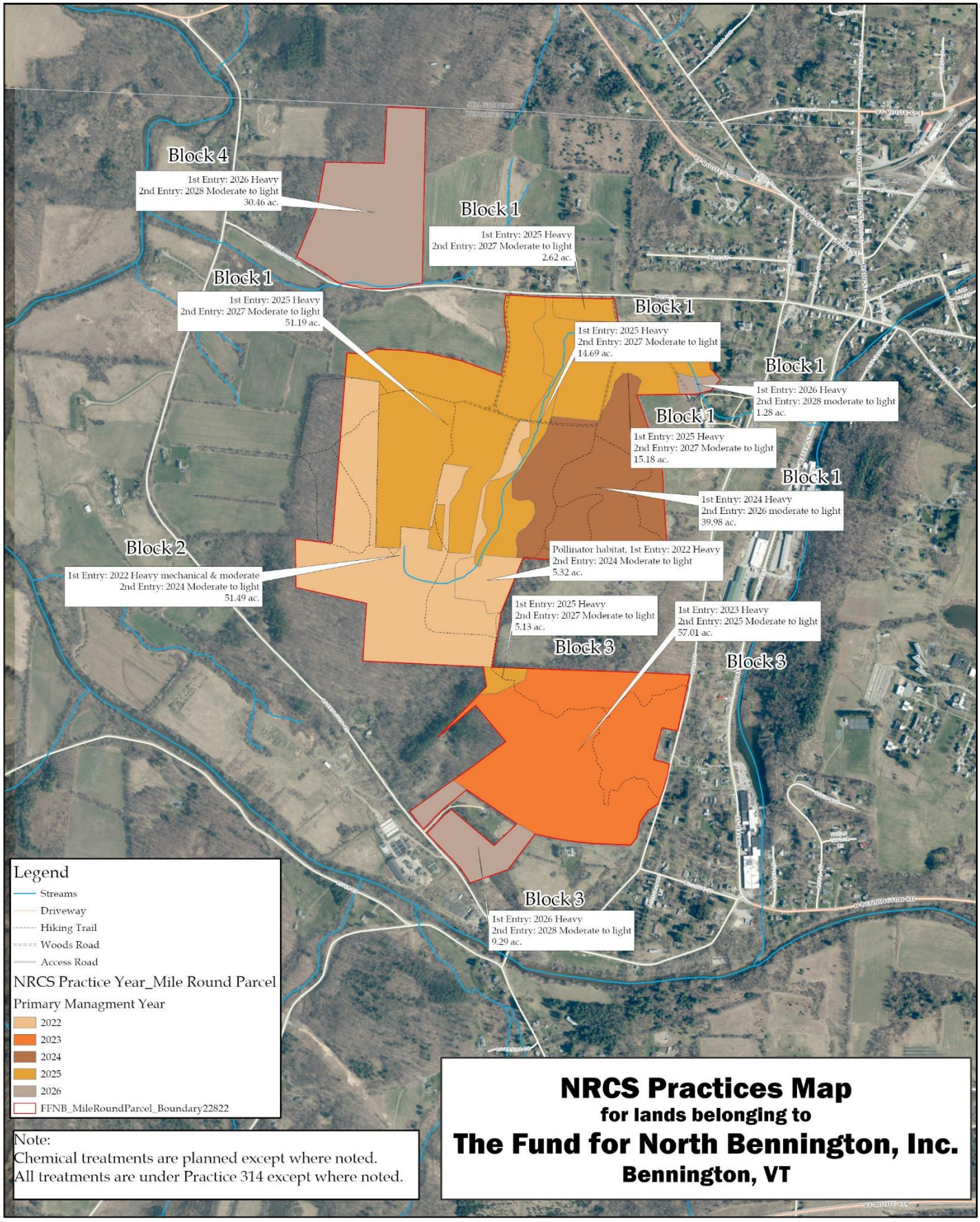
for lands belonging to

Fund for North Bennington - West

Bennington, VT

0 500 1,000 2,000 US Feet

Long View Forest MANAGEMENT


Block 4
1st Entry: 2026 Heavy
2nd Entry: 2028 Moderate to light
30.46 ac.
Block 1
1st Entry: 2025 Heavy
2nd Entry: 2027 Moderate to light
2.62 ac.
Block 1
1st Entry: 2025 Heavy
2nd Entry: 2027 Moderate to light
51.19 ac.
Block 1
1st Entry: 2025 Heavy
2nd Entry: 2027 Moderate to light
14.69 ac.
Block 1
1st Entry: 2026 Heavy
2nd Entry: 2028 moderate to light
1.28 ac.
Block 1
1st Entry: 2025 Heavy
2nd Entry: 2027 Moderate to light
15.18 ac.
Block 1
1st Entry: 2024 Heavy
2nd Entry: 2026 moderate to light
39.98 ac.
Block 2
1st Entry: 2022 Heavy mechanical & moderate
2nd Entry: 2024 Moderate to light
51.49 ac.
Pollinator habitat, 1st Entry: 2022 Heavy
2nd Entry: 2024 Moderate to light
5.32 ac.
1st Entry: 2025 Heavy
2nd Entry: 2027 Moderate to light
5.13 ac.
1st Entry: 2023 Heavy
2nd Entry: 2025 Moderate to light
57.01 ac.
Block 3
Block 3
Block 3
1st Entry: 2026 Heavy
2nd Entry: 2028 Moderate to light
9.29 ac.
Legend
Streams
Driveway
Hiking Trail
Woods Road
Access Road
NRCS Practice Year_Mile Round Parcel
Primary Managment Year
2022
2023
2024
2025
2026
FFNB_MileRoundParcel_Boundary22822
Note:
Chemical treatments are planned except where noted.
All treatments are under Practice 314 except where noted.
NRCS Practices Map
for lands belonging to
The Fund for North Bennington, Inc.
Bennington, VT
0 500 1,000 2,000 US Feet
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Long View Forest
MANAGEMENT

VII. APPENDIX

A. Invasives Assessment for NRCS Funding Considerations

Fund for North Bennington
Invasive Plant Assessment Project

Prepared by Tom Groves

VT Pesticide License #1208-4955

Scope of Work – Mile Around Woods

Complete an invasive plant assessment and map populations, species, and densities for use in The Fund for North Bennington's subsequent application for Natural Resources Conservation Service invasive plant control grant funding opportunities.

All of the lands owned by the Fund for North Bennington have some aspect of invasive plants present in the understory. These species are found throughout the properties in varying densities. In reference to the provided invasive plant map, the species which have a specialized funding designation (phragmites and poison parsnip) have been sectioned out. For the purposes of this document, it should be assumed that glossy buckthorn, common buckthorn, oriental bittersweet, burning bush, multiflora rose, and invasive honeysuckle are present.

Block 1 (Map 1)– 61 acres

These acres begin at the trailhead parking area off West St. and extent south on the property into "Mile-Around Woods". The invasive plant density in these sections averages on the smaller side but would still be classified as heavy.

Poison parsnip occurs along the wetlands edge as well as along the edges of the vegetative islands left by the mowers. It is suspected that there is quite a bit more poison parsnip in these areas but that the mowing regime keeps them hard to see.

There are areas where oriental bittersweet vines and stands of large common buckthorns are present and would have to be cut down for treatment. Care should be taken in these areas to avoid any plants of uncommon or special concern.

Block 2 (Map 1) – 22.59 acres

This area is to the West of "Mile-Around Woods" and touches the western property boundary with a small 0.85-acre section just to the north. The edge of this western field (~5 acres) in this section is particularly infested with common buckthorn. The invasive plants taper off upon entering the woods, but where blow downs or natural openings have occurred, the invasive plants are understandably much denser. The 0.85 and ~5-acre sections could be mowed with a brontosaurus mower the year before chemical treatment. Overall, these acres should be classified as a medium density infestation.

Block 3 (Map 1) – 70.4 acres

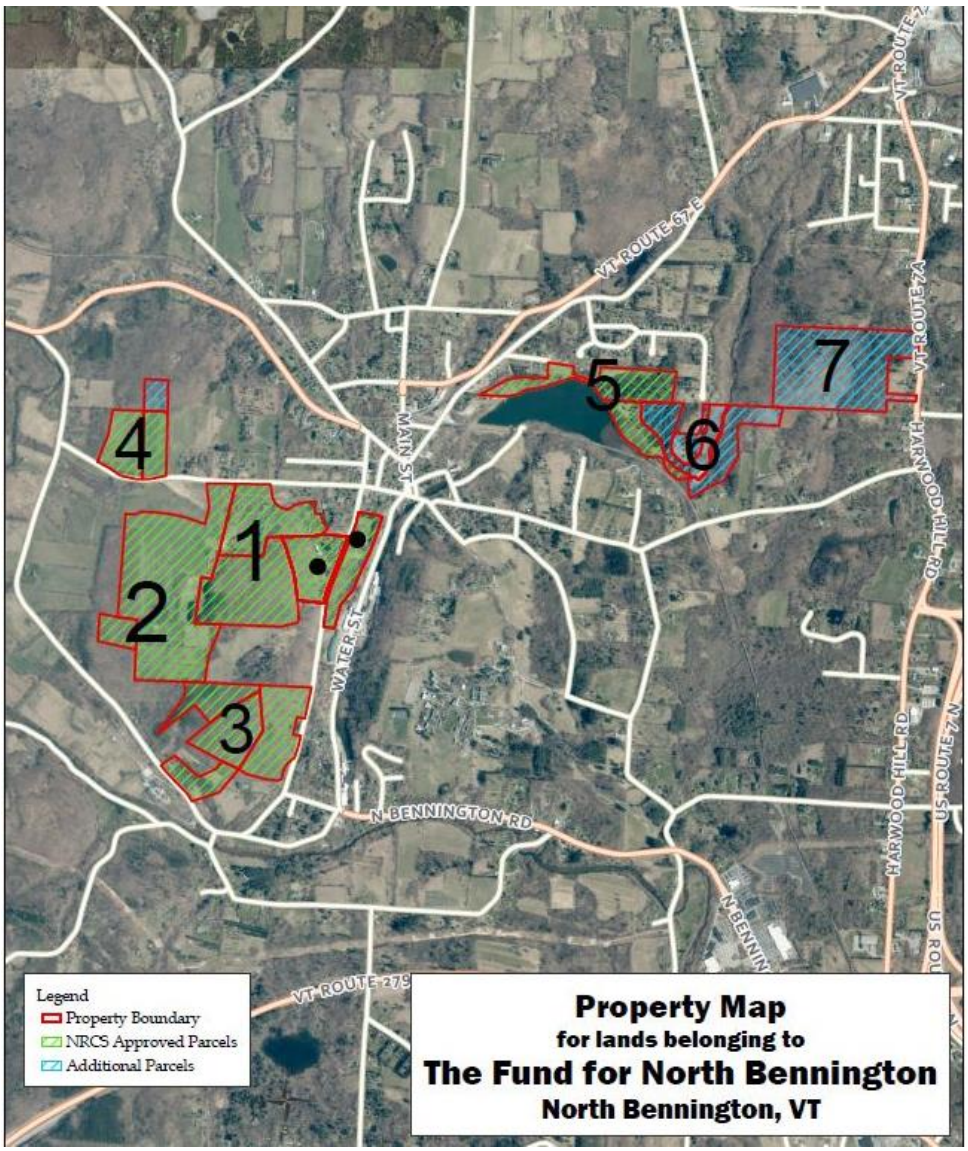
In these southern sections of the property in between Harrington Rd. and Park St. there are the usual invasive plants in a medium to heavy density with a few pockets that are invasive free. Also found in these sections is garlic mustard. This species is one that can easily be managed without herbicide by hand pulling and bagging in the spring before it starts to flower. Please see the map for the specified location.

Block 4 (Map 1) – 10.45 acres

This section of the property is primarily fields presumably being hayed similarly to the other sections of property. The field edges and hedge rows in this section is high density invasive plants (5.4 ac.) with a 10′ wide field edge strip and a vegetated, un-mowed island (see map) of poison parsnip (1.24 ac.) Like in Block 1, it is suspected that the poison parsnip also occurs in areas where there's a mowing regime. The remaining area for treatment of invasive plants occurs to the north in this block. There are some tall common buckthorns in a stand in this location with a widespread medium density understory of invasive plants.

Summary Table

Density	Acres
Heavy	283.59
Moderate	21.1
Heavy Herbaceous	1.47
Heavy Mechanical	26.32
Total Treatment Acres	**332.48**



B. Reader's Guide to Forest Management Planning

The following is a description of the forest management planning process. To assist the reader with unfamiliar terminology, a glossary has been provided at the end of the document. Long View Forest Management continually updates the format of management plans to improve communication with landowners. Suggestions for improvement are therefore greatly appreciated.

Mapping

The first step in preparing a forest management plan is mapping. A previous forest management map or survey allows the forester to locate the property and get oriented on it. Relevant physical features are also mapped, landform, water bodies, soil types and man-made features. A regular grid of forest inventory points is superimposed on the property map. These points are loaded onto a GPS device to guide the forester and ensure complete inventory coverage when he or she later visits the property.

The Forest Inventory

After mapping, a forester visits the property to conduct the forest inventory. Data on the following biological and physical features is gathered to help guide forest management decisions:

- Cultural features *(e.g., old cellar holes, sugarhouse foundations, old quarries)*
- Forest health *(insect pests, pathogens, invasive species, or natural disturbances)*
- Herbaceous plants *(seasonally dependent)*
- Management history *(past logging, farming, or other land management activity)*
- Recreational features *(existing or potential)*
- Site conditions *(aspect, elevation & terrain features)*
- Tree species present *(size, quantity & quality)*
- Wildlife features *(wildlife sign, sightings & habitat features)*

Delineating Forest Management Units

Returning to the office, forest management units are delineated using forest inventory data and other information. Forest management units are contiguous or closely spaced areas where the trees are of sufficiently uniform age distribution, composition, and structure, and where the site is of sufficiently uniform quality that they can be distinguished from other areas. Foresters rely on the following landscape attributes when delineating forest management units:

- Uniformity of tree growth *(forest stand and/or natural community type)*

- Defining terrain features *(e.g., ledges, ridges, aspect, slope, physical connectivity)*
- Soil type
- Land use history
- Man-made features *(roads, driveways, woods roads)*
- Access points and available landing areas

Writing the Forest Management Plan

Next, planned forest management activities are written for each forest management unit. Common activities include pre-commercial thinning to favor the growth of desirable trees, harvesting of wood products, improvements to property access points and skid trails, and property boundary maintenance. With a plan for forest management activities over the planning period in hand, the forest management plan itself is written. The plan contains detailed descriptions of the existing forest management units at the time the inventory data was collected, as well as specifications for planned forest management activities over the ten-year planning period.

C. *Resources for the Landowner*

COST SHARE PROGRAMS	
Environmental Quality Incentives Program (EQUIP)	http://www.nrcs.usda.gov/PROGRAMS/EQIP/
Forest Stewardship Program	http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml
NRCS Conservation Practice Standards (Provides information on all the different Conservation Practices and their codes)	http://www.nrcs.usda.gov/technical/standards/nhcp.html
Vermont NRCS	http://www.vt.nrcs.usda.gov/

FOREST CERTIFICATION SCHEMES	
American Tree Farm System	http://www.treefarmsystem.org/
Forest Stewardship Council (FSC)	http://fscus.org/
Programme for the Endorsement of Forest Certification schemes (PEFC)	http://www.pefc.org/internet/html/index.htm
Sustainable Forestry Initiative (SFI)	http://www.sfiprogram.org/

INSECTS & DISEASES	
Cornell Christmas Tree Integrated Pest Management	http://www.nysipm.cornell.edu/publications/field_guide_xmas_trees/field_guide_xmas_trees.asp
Forest Insect & Disease leaflets- United States Forest Service	http://www.fs.fed.us/r6/nr/fid/wo-fidls/
USFS- forest health page	http://na.fs.fed.us/pubs/misc.shtm
Invasive/ Exotic Management	
Invasive Plant Atlas of New England's (IPANE)	http://nbii-nin.ciesin.columbia.edu/ipane/
Vermont invasive exotic plant committee	http://vtinvasives.org/

MAPPING	
Agency of Natural Resources Atlas	http://anrmaps.vermont.gov/websites/anra5/
Wetland, Woodland, Wildland- VT Fish and Wildlife Library (Natural Communities)	http://www.vtfishandwildlife.com/about_us/fish_wildlife_store/fish_wildlife_books
Windham regional commission	http://windhamregional.org/
Vermont Center for Geographic Information	http://www.vcgi.org/

MISCELLANEOUS	
Vermont Department of Forests, Parks & Recreation Publications	http://www.vtfpr.org/htm/gen_publications.cfm
Vermont Department of Forests, Parks & Recreation / UVM Extension	https://www.ourvermontwoods.org/
To find out information on your watershed, visit	http://cfpub.epa.gov/surf/locate/index.cfm
Backyard Conservation: Natural Resources Conservation Service (NRCS)	http://www.nrcs.usda.gov/wps/portal/nrcs/detail/?ss=16&navtype=BROWSEBYSUBJECT&cid=nrcs143_023574&navid=220120000000000&position=Not%20Yet%20Determined.Html&ttype=detail
Good forestry in the Granite State (13MB)	http://extension.unh.edu/goodforestry/index.htm
Online Conversion (convert any unit of measurement to anything else)	http://www.onlineconversion.com/
National Timber Tax website	http://www.timbertax.org/
UNH cooperative extension	http://extension.unh.edu/

ORGANIZATIONS	
Windham Regional Woodlands Association	http://woodlandownersassociation.org
Center for Northern Woodlands Education	http://northernwoodlands.org/
The Forest Guild	http://www.forestguild.org/
Society of American Foresters	http://www.safnet.org/
Vermont Coverts	http://www.vtcoverts.org/
Vermont Maple Sugar Maker's Association	http://vermontmaple.org/
Vermont Woodlands Association	http://www.vermontwoodlands.org/
National Woodland Owners Association	http://woodlandowners.org/

TREE & PLANT IDENTIFICATION	
New England Wildflower Society Simple Key	https://gobotany.newenglandwild.org/
Silvics of North America	http://www.na.fs.fed.us/spfo/pubs/silvics_manual/table_of_contents.htm

SOILS & GEOLOGY	
USDA Web Soil Survey	http://websoilsurvey.nrcs.usda.gov/app/
Vermont Geological Survey	http://www.anr.state.vt.us/dec/geo/vgs.htm

USE VALUE APPRAISAL	
PV&R- property valuation & review (VT Dept. of Taxes)	http://tax.vermont.gov/property-owners/current-use
Use Value Appraisal Program Revised Manual (and others)	http://www.vtfpr.org/resource/for_forres_useapp.cfm

VERMONT AGENCIES	
Vermont Agency of Natural Resources	http://www.anr.state.vt.us/
Vermont Department of Fish & Wildlife	http://www.vtfishandwildlife.com/
Vermont Department of Forests, Parks & Recreation	http://www.vtfpr.org/index.cfm
VT Natural Resources Conservation Service (NRCS)	http://www.vt.nrcs.usda.gov/

D. Forest Management Reference Publications

1. *Silvicultural Guide for Northern Hardwood Types in the Northeast* (revised). USDA-USFS-NA-FES. Leak, Solomon, De Bald. Research Paper NE-603. 1987.
2. A Silvicultural Guide for Spruce-Fir in the Northeast. USDA- USFS-NA-FES. Technical Report NE-6. 1973.
3. Uneven-aged Management of Northern Hardwoods in New England. USDA-USFS. Research Paper NE-332. 1975.
4. *A Stocking Guide for Eastern White Pine*. USDA-USFS. Research Note NE-168. 1973.
5. *A Silvicultural Guide for White Pine in the Northeast.* USDA-USFS. Lancaster & Leak. General Technical Report NE-41. 1978.
6. Bennett, Karen P. editor. 2010. Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire (second edition). University of New Hampshire Cooperative Extension, Durham, N.H. www.goodforestry.org
7. Revised White Pine Stocking Guide for Managed Stands. USDA-USFS-NASPF. Leak & Lamson. NA-TP-01-99. 1999.
8. *White Pine Management – A Quick Review.* USDA-USFS-NASPF-NA-FR-27. Lancaster. 1984.
9. A Silvicultural Guide for Northern Hardwoods in the Northeast. USDA-USFS. Research Paper NRS-132. April 2014.
10. Forester's Guide to Marking and Grading Eastern Hemlock Timber. GFA Project Hemlock Utilization Guide No. 1. 1973.
11. A Guide to Hardwood Timber Stand Improvement. USDA-USFS-NA Upper Darby, PA. 1975.
12. *Crop Tree Management in Eastern Hardwoods.* USDA-USFS-NASPF. Perkey. NA-TP-19-93. 1993.
13. Establishing Even-aged Northern Hardwood Regeneration by Shelterwood Method – A Preliminary Guide. USDA-USFS-FES North Central. Research Paper NC-99. 1973.
14. Manager's Handbook for Northern White Cedar in the North Central States. USDA-USFS-FES. General Technical Report NC-35. 1977.
15. Manager's Handbook for Red Pine in the North Central States. USDA-USFS-FES. General Technical Report NC-33. 1977. Use
16. *Manager's Handbook for Oaks in the North Central States.* USDA-USFS-FES North Central. General Technical Report NC-37. 1977.
17. *Manager's Handbook for Aspen in the North Central States.* USDA-USFS-FES North Central. General Technical Report NC-37. 1977.
18. Managing Eastern Hemlock: A Preliminary Guide. USDA-USFS-NA-FR-30. 1985.
19. *Reforestation Handbook / Stocking Standards.* USDA-USFS. Handbook R-9. GMNF Supplement No. 4 pp. 113.2-113.3.
20. *Silvicultural Guide for Paper Birch in the Northeast* (revised). USDA-USFS-NA-FES. Research Paper NE-535. 1983.
21. *Forest Statistics for Vermont, 1933 and 1983.* USDA-USFS-FES Northeastern Station. Research Bulletin NE-87. 1985. pp. 99-100 (Log grade standards).
22. Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont. VT ANR-FPR. 15 August 1987.
23. Management Guide for Deer Wintering Areas in Vermont. Russell S. Reay et al., VT ANR-FPR-FW. 1990.
24. Elementary Forest Sampling & Elementary Statistical Methods for Foresters. USDA-USFS-FES Southern. Freese & Frank. 1962.
25. *Forestry Handbook.* Wenger, Karl, ed. Society of American Foresters. New York: John Wiley and Sons, 1984.
26. *Forest Measurements.* Avery, Thomas E. and Burkhart, Harold, E. Boston: McGraw Hill, 1994.
27. Forest Wetlands Functions, Benefits, and the Use of Best Management Practices. USDA-USFS-NA. PR-01-95. 1995.
28. *Technical Guide to Forest Wildlife Habitat Management in New England*. University of Vermont Press, Burlington, VT. DeGraaf et al. 2006.
29. Wetland, Woodland, Wildland A Guide to the Natural Communities of Vermont. University Press, Hanover, NH. Thompson & Sorenson. 2005.
30. The Practice of Silviculture, 7th edition. D. M. Smith. Wiley and Sons

E. Glossary

ACCEPTABLE GROWING STOCK (AGS): STEMS of commercial tree species which have the potential to produce one 12-foot or two non-contiguous 8-foot sawlogs, where the management objective is sawlog production.

ADVANCED REGENERATION: See REGENERATION

AVERAGE HAUL DISTANCE: Approximate distance from the geographic center of a harvest area to the nearest class 1, 2, or 3 road or log landing

BASAL AREA (BA): A measurement of stand density, commonly expressed on a per-acre basis. Basal area is the sum of the cross-sectional areas of all trees measured at BREAST HEIGHT.

BEST MANAGEMENT PRACTICE(S) (BMP): A practice or usually a combination of practices that are determined by a state or designated planning agency to be the most effective and practicable means (including technological, economic, and institutional considerations) of controlling point and non-point source pollutants at levels compatible with environmental quality goals.

CO-DOMINANT: Large-crowned at the average height of the forest canopy, receiving sunlight from above and partly from the sides. Co-dominant crowns are somewhat smaller than DOMINANTS but still healthy and vigorous.

COMMERCIAL TREATMENT: A silvicultural treatment that results in the generation of positive revenue for the owner of the timber.

CORD: A unit of measure equal to 128 cubic feet of wood or a stacked pile of wood that measures 4 feet by 4 feet by 8 feet. Cords are used to measure firewood and PULPWOOD.

CORDWOOD: Generally, stems of hardwood species suitable only for sale as firewood

CROP TREES: Growing trees chosen for their potential to produce high quality timber. Crop trees are generally straight, vigorous, and disease-free and consequently respond best to thinning treatments with increased growth rates. Where specified, crop trees may be chosen based on other criteria, including value as a food source or habitat for wildlife or for aesthetic value.

CROWN: The upper part of the tree, including branches with foliage

CULL: A tree of sufficiently poor form or internal defect as to be un-merchantable

CUTTING CYCLE: The planned or recommended interval between harvest operations within a stand

DIAMETER AT BREAST HEIGHT (DBH): The diameter of a tree outside the bark at a point 4.5 feet above ground level

DOMINANT: Trees with wide crowns above the level of the forest canopy, receiving sunlight from above and from the sides

EVEN AGED: Stands with two or fewer size classes.

FOREST INVENTORY: A set of objective sampling methods designed to quantify the spatial distribution, composition, and rates of change of forest parameters within specified levels of precision for the purposes of management.

FUELWOOD: See CORDWOOD

GIRDLE: To encircle the bole of a tree with a cut extending past the cambium layer (inner bark) into the xylem layer (center of the tree) to kill the tree without felling it

GROUP: A group of trees comprising a small harvest unit, generally a few acres in size or less, intended to open up a gap in the forest canopy to permit the establishment and growth of new tree seedlings

HARD MAST: Tree seeds or nuts, typically of oak, beech, and hickory, which serve as food for wildlife.

HIGH GRADING: A harvesting practice involving the removal of the most commercially valuable trees leaving a residual stand composed of trees of poor form and undesirable species composition. High grading may result in dysgenic effects and have long-term negative economic and forest health implications.

INTERMEDIATE: A tree with most of the crown below the average canopy level which receives some sunlight from above and little or none from the sides

LANDING: A generally flat, open area that can be easily accessed by a log truck or truck and trailer where wood is gathered during a harvest and where logs are sorted and stacked to await transport to mill or market

MANAGEMENT UNIT: A subdivision of a management area, often synonymous with STAND

OPPRESSED: Trees fitting the definition of suppressed, but having been so for a sufficient length of time that they will not recover or respond if released

OVERSTORY: The upper crown canopy of a forest.

PRE-COMMERCIAL THINNING (PCT): The removal of un-merchantable or sub-merchantable trees to reduce stocking and concentrate growth rates in the most desirable individuals.

POLE-TIMBER, POLES: Trees 5-9" DBH

PULPWOOD: Wood of generally lower quality for manufacture into wood pulp, paper, fiber, board, or other products

REGENERATION: Young seedlings and saplings. If seedlings and saplings are present prior to any cutting, they may be termed advanced regeneration.

SAPLINGS: Trees 3-10 feet high and up to 5" DBH

SAWTIMBER: Trees 12" DBH and up (10” and up for red spruce and balsam fir)

SEEDLINGS: Young trees up to 3 feet high

SILVICS: The study of the life history and characteristics of forest trees and stands, with particular reference to environmental factors

SILVICULTURE: The scientific theory and practice of controlling forest establishment, composition, and growth to obtain forest crops and other benefits

SITE: The biotic, climatic, and soil conditions of a given area which are relevant to the growth of trees

SITE CLASS: A measure of the capacity of a site to support the growth of desirable trees. Site class may be given for one species or for the range of species growing in a STAND. Site class is most commonly represented with Roman numerals I – IV, with Site I being the best sites and Site IV being the worst.

SLASH: Branches, bark, tops, chunks, cull logs, uprooted stumps and broken or uprooted trees left on the ground after logging

SMALL SAWTIMBER: Trees 10-15" DBH

SOFT MAST: Fruit or berries, typically of dogwood, viburnum, elderberry, blueberry, hawthorn, grape, raspberry, and blackberry, which serve as a food source for wildlife.

STAND: An aggregation of trees occupying a specific area and sufficiently uniform in species composition, age, arrangement, and conditions as to be distinguishable from the trees in adjoining areas

STEM: A synonym for an individual tree; may refer to the main trunk of a tree, not including branches, foliage, stump, or roots

STOCKING: A measure of the density of a stand, usually determined by the number of trees per acre and their average diameter

STUMPAGE: The monetary value of standing timber to the owner of the timber. Stumpage is generally calculated as:

= (Price paid by mill for delivered wood) less (Cost of trucking from roadside to mill) less (Cost of logging and skidding to roadside)

SUPPRESSED: Trees overtopped by larger trees and receiving only indirect sunlight

TIMBER STAND IMPROVEMENT (TSI): See PRE-COMMERCIAL THINNING

UNACCEPTABLE GROWING STOCK (UGS): Live trees judged to be of relatively poorer form or health, and which should be removed at the time of the next timber harvest to provide trees of relatively better form with more room to grow.

UNDERSTORY: Trees or shrubs growing below the main canopy in a forest STAND

UNEVEN-AGED: A STAND with three or more size classes

WEED: A tree species with little or no commercial value

WOLF TREE: Trees with widespread crowns which hinder the growth of ACCEPTABLE GROWING STOCK and are themselves of little commercial value. They often have significant value for wildlife or aesthetics, however.

VIII. USE VALUE APPRAISAL PARCEL DATA ENTRY FORM

(☐New ☒ Update* ☐ Amendment** ☐ Change of Ownership) page 1 of 2

FP&R COUNTY FORESTER USE ONLY

Parcel ID for Data Entry (by state) # __ __ __ __ __, __ __ __ __ __ - __ __ __ __ __ Year of Entry _____

Year of Plan_____ Year of Last Inspection_____

1) Landowner Name (last name first) **The Fund for North Bennington, Inc.**

2) Landowner Address (Street, PO Box) **c/o Robert Woolmington, 23 Mechanic Street**

(Town) **North Bennington** (State) **VT** (Zip Code) **05257**

Phone Number **802-282-3401** Email Address **thefund@northbennington.org**

3) Town That Parcel Is in **Bennington** 4) Total Forestry Acres in Parcel **143.12** (Grand list acreage, minus agricultural or non-productive land and exclusions)

5) Plan Preparer (last name first) **Long View Forest Management** 6) Previous Owner (last name first) -

7) SPAN- **051-015-63864**

8) Stand information: (this information is for data entry only and does not override what is in actual plan)

Stand #	Acres	Even-aged (1), Uneven-aged (2) (existing)	Predominant Site Class (1, 2, 3, or 4)	Timber Type	Quadratic M.S.D.	Total BA	AGS BA	Mgmt. Activities	Scheduled Date (+/- 3 yrs.)
4	39.06	1	1	6	11	100	87	15	2022
4	39.06	1	1	6	11	100	87	15	2022
6	48.63	1	1	6	13	85	80	15	2023
14	16.65	1	1	6	16	115	100	15	2023
2	8.29	1	2	6	12	95	50	15	2024
3	21.08	1	2	6	13	90	70	15	2024
8	5.20	-	-	14	-	-	-	15	2024
5	5.99	1	1	3	15	200	133	15	2025
5	5.99	1	1	3	15	200	133	15	2025
6	48.63	1	1	6	13	85	80	15	2025
8	5.20	-	-	14	-	-	-	13	2025
14	16.65	1	1	6	16	115	100	15	2025
9b, 9c	12.82	-	-	14	-	-	-	15	2025
1	3.08	1	2	6	13	107	107	15	2026
2	8.29	1	2	6	12	95	50	15	2026
3	21.08	1	2	6	13	90	70	15	2026
7	7.47	1	1	12	8	71	3	5	2026
7	7.47	1	1	12	8	71	3	15	2026
8	5.20	-	-	14	-	-	-	15	2026
9a	12.82	-	-	14	-	-	-	15	2026
11	1.16	-	-	14	-	-	-	15	2026
9b, 9c	12.82	-	-	14	-	-	-	15	2027
1	3.08	1	2	6	13	107	107	15	2028
7	7.47	1	1	12	8	71	3	15	2028
9a	12.82	-	-	14	-	-	-	15	2028
11	1.16	-	-	14	-	-	-	15	2028

*Update of an existing plan that includes all new stand descriptive data required every 10 years at minimum.

**Change to an existing plan does not change the 10-year cycle of the existing plan. If this form is filed with an amendment, indicate the amended information in the appropriate stand, and write an explanation in section 12. Amendments must be signed by the landowner(s).

9) No activity (identify stand # and reasons) -

10) Management Activities- other (identify stand #) **Unit 8: Establish pollinator habitat**

11) Timber Types- other (identify stand #) **Unit 7: Scotch pine plantation**

12) Amended prescriptions (identify stand #) -

STAND TYPES	**CODE#**
Aspen and/or white birch	01
White pine, red oak	02
White pine	03
Hemlock	04
Sugar maple	05
Beech, birch, sugar maple	06
Beech, red maple	07
Spruce	08
Spruce/fir	09
Pioneer species	10
Mixedwood (25%-65% softwood)	11
Other (identify other in section 12)	12
ESTA	13
Open	14
Significant wildlife habitat	15
Special places and sensitive sites	16
Miscellaneous	17

MANAGEMENT ACTIVITY CODES (if one of the following choices reasonably describes the planned management activity, use it. If not, use #13 other and describe the management activity in Section 10. Note these descriptions are for choosing codes only; they are not silvicultural standards).

1. Non-commercial forest stand improvement

EVEN-AGED MANAGEMENT

2. Intermediate thinning
3. Shelterwood cut
4. Overstory removal cut
5. Clearcut
6. Progressive clearcutting

UNEVEN-AGED MANAGEMENT

7. Individual tree selection
8. Group selection

MISCELLANEOUS CHOICES

9. Salvage cut
10. Sugarbush thinning
11. Species conversion
12. No activity
13. Other
14. Crop tree release
15. Invasive species control